3900

precaudals, first slightly nearer margin of infracaudal scales than seventh posteroanal, upper spot at end of lateral line. Dorsal series of 19 photophores along each side of back from nape till behind dorsal fin, 16 in main series. Supracaudal luminous scales 3, infracaudal 7.

D. 16; A. 17, begin below hind basal edge of dorsal; pectoral 3 1/6 in combined head and body to caudal base, ventral 1 1/2 in head.

Length without caudal 55 mm. (Parr.)

Western Atlantic.

3901

Lampanyctus hectoris (Günther)

Scopelus hectoris Günther, Ann. Mag. Nat. Hist., ser. 4, vol. 17, 1876, p. 399. Cook's Strait, New Zealand.

Lampanyctus hectoris Norman, Discovery Rep., vol. 2, 1930, p. 328 (S. 33°20' to 33°11' E. 17°17' to 17°26', 200 meters; type; paratypes of Scopelus argenteus).

3902

Lampanyctus argenteus Gilchrist

Scopelus argenteus Gilchrist, Marine Invertig. South Africa, vol. 3, 1904, p. 15, pl. 36. Constable Hill (nearing Saldanha Bay) bearing E. 3/4 S., distant 19½ miles, [redacted] Green — Thompson, Marine Biolog. Rep. South Africa, no. 3, 1916, p.

Point bearing S.E. by E. ½ E., distant 36 miles; South Head bearing E. by S. ½ S., distant 25 miles.

Myctophum (Lampanyctus) argenteus Barnard, Ann. South African Mus., vol. 21, pt. 1, 1925, p. 238 (off Saldanha Bay, Table Bay and Cape Point, to 315 futhoms; type).

Lampanyctus argenteus Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 83 (compiled).

3903

Depth 4 3/5; head 3 1/2, width 2.1 snout 6 in head; eye 4, greater than snout; maxillary reaches well beyond eye though not quite to well inclined hind preopercle edge; interorbital about 3, low.

Scales 38 (figure shows 50 in lateral line, not enlarged; 2 above, 3 below).

One antorbital luminous organ, somewhat indistinct, on front margin of eye little below nostril; 2 opercular photophores, upper in line with lower eye edge and suprapectoral, lower (not shown on figure) behind mouth

in line with branchiostegal; 3 equidistant branchiostegals; 5 pectorals, first interspace longest, third photophore little elevated, likewise fifth which about level with lower subpectoral; 1 suprapectoral close above pectoral fin origin; 2 subpectorals, first or lower well above though midway in space between first and second ventrals, upper close before median pectoral fin ray bases; 5 ventrals, progressively higher from first to third which level with upper subpectoral; 1 supraventral little before and about midway between lateral line and ventral fin origin; 8 + 5 anals, all at same level, only last

2 posteroanals behind anal fin base;
3 supraanals in oblique line with last
ventral so uppermost about upper 2/5
of space below lateral line; 1 posterolateral
little above last anteroanal though midway
in space below lateral line opposite
adipose fin origin; 5 precaudals, last 2
progressively higher with last still
well below end of lateral line. Patch
of luminous scales supracaudal and
infracaudal. Snout covered by soft
glandular tissue, probably luminous
in function.

D. II, 11, first branched ray 1 4/5-
in head; adipose fin 3 1/3; A. II, 14,

first branched ray 2 1/4; caudal 1 1/5,
well forked; pectoral 2 1/4; ventral 1 3/4.

Dark brown along dorsal region of body, reaching half way to lateral line and less marked brown tinge along ventral region. In middle of body coloring matter nearly absent and scales with bright silvery appearance.

Length not given, figure 73 mm. (Gilbert.)

Antarctic and Pacific Oceans. As mentioned by Gilchrist this species appears to be unique in the presence of 5 precaudal photophores.

3907

Lampanyctus tenuiformis (Brauer)

Myctophum (Lampanyctus) tenuiforme

Brauer, Deutsch. Tiefsee Exped. Valdivia,

vol. 15, Tiefsee-Fische, 1906, p. 243, text

fig. 160, (trunk). (between Seychelles and Zangibar,

S. Lat. 4°34'8" E. Long. 53°42'8",)

Pappenheim, Deutsch. Südpolar Exped.,

vol. 15, Zool. 7, 1914, p. 197 (N. 0°46' W. 18°59'; 3000 meters; south east of Cape

Verde Islands).

Lampanyctus tenuiforme Parr, Bull.

Bingham Oceanogr. Collection, vol. 3, art. 3,

1928, p. 83 (compiled).

depth 5; head 3. Eye 6 in head;

maxillary extends well beyond eye.

Scales 37 or 38 in lateral line,

cycloid.

small antorbital photophore;
ventrals 4, level, equidistant; 1
supraventral, midway between lateral
line and ventral fin origin; anals
5 + 9, level, posteroanals behind
anal fin base; 3 supraanals, in
broad angular series, first over third
ventral, second little behind fourth
ventral and higher than first spot
though both lower than supraventral,
third close behind and close below
lateral line, forms inclined series
with second supraanal and fourth ventral spots;

2 posterolaterals, in little inclined line passing little behind last anteroanal though first little nearer latter than second close below lateral line; 2 precaudals, first separated from last posteroanal and second close below end of lateral line. Supracaudal luminous scales 4, infracaudal 4.

D. III, 9, inserted little behind ventral origin; A. III, 15, inserted below last fourth of dorsal fin base; pectoral nearly reaches anal origin.

Length 21 mm. (Brauer.)

Indian Ocean.

3910

Lampanyctus nobilis Taaning

Lampanyctus nobilis Taaning, Vidensk. Medd. Dansk naturh. Foren. Köbenhavn, vol. 86, 1928, p. 66. North Atlantic; diagnosis in key. — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, 1928, p. 84 (compiled); vol. 2, art. 4, Oct. 1931, p. 29, fig. 11 (note).

Depth 5 4/5; head 3 1/5. Snout 5 4/5 in head from snout tip; eye 5 4/5, equals snout; maxillary extends 1 1/2 eye diameters behind eye, slender, length 1 3/5 in head from snout tip; interorbital low.

Small photophore on shoulder at

beginning of lateral line; 5 pectorals, first interval longest, fourth spot elevated level with upper subpectoral over and little behind third; 1 suprapectoral close below lateral line before subpectorals; 2 subpectorals, in line with suprapectoral, lower close below upper which before bases of upper pectoral rays; 4 ventrals, equidistant, last interval longest, second spot slightly elevated; 1 supraventral, about upper 2/5 between lateral line and ventral fin base;

anals 6 + 8, first anteroanal
only very slightly lower than rest,
first posteroanal at last anal ray
base, others behind anal fin base;
3 supraanals, in angulate series,
first above last ventral interspace,
second and third spots in inclined
line with last ventral spot with
second little higher than first and
third close below lateral line; 2
posterolaterals, in inclined line
passing little behind last anteroanal,
upper close below lateral line; 4

precaudals, separated from posteroanals, second to fourth in oblique line with last close below end of lateral line. Supracaudal luminous scales 4, infracaudal 8.

D. 15, I. 19, I, inserted below last dorsal ray bases; least depth of caudal peduncle 3 5/6 in total head; pectoral 3 1/2 in combined head and body without caudal.

Length without caudal 33.5. (Parr.)

North Atlantic.

3914

Lampanyctus festivus Taaning

Lampanyctus festivus Taaning, Vidensk. Medd. Dansk naturh. Foren. Köbenhavn, vol. 86, 1928, p. 67. North Atlantic; diagnosis in key. — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, 1928, p. 84 (compiled). — Norman, Discovery Rep., vol. 2, 1930, p. 330 (S. 33°25' E. 6°31', 1000 meters; S. 35°01' E. 10°18', 250 meters; S. 2°43'30" W. 00°56'30", 1256 175 meters); S. 00°56' W. 14°08'30", 250 meters):

No photophore on cheek; anals 6 to 8 + 7 to 9; no distinct interval between last posteroanal and precaudals; first supraanal most frequently above

or little anterior to third ventral,
sometimes displaced more anteriorly
to nearly above second ventral spot;
first supraanal not in line parallel
to that passing through third supraanal,
supraventral and fourth pectoral;
precaudals 2+2, last and penultimate
spots in vertical or nearly vertical
line, ultimate spot sometimes trifle
posterior or abnormally anterior to
vertical but last 3 spots never
in straight line. No luminous scale
or adipose fin.

3915

D. 12 to 14; A. 18 to 20.

(Jaaning.)

North Atlantic.

3916

Lampanyctus nigrescens (Brauer)

Myctophum (Lampanyctus) nigrescens

Brauer, Zool. Anzeiger, vol. 28, no. 10, Dec. 20, 1904, p. 403.

Indian Ocean;

(Deutsch. Tiefsee Exped. Valdivia, vol. 15,

Tiefsee-Fische, 1906, p. 241, text fig. 158

S. 2°38'9" E. 63°37'9",

(east of Seychelles, 800 to 1000 meters; S. 3°24'6"

E. 58°38'1").

Lampanyctus nigrescens Parr, Bull. Bingham

Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p.

84 (reference).

depth 5; head 3 1/6. Snout 5 1/3

in head; eye 8 1/2, 1 3/4 in snout;

maxillary extends 3 eye diameters

behind eye, slender, length 1 2/5 in

head; interorbital low.

Small antorbital photophore
at lower front eye edge; 2 opercular,
upper larger, little above hind
upper edge of maxillary; 3 branchiostegals;
5 pectorals, first interspace greatest,
fourth spot over and little posterior
to third and little above level of
upper opercular, interval to third
or fifth subequal with first interval;
1 suprapectoral, about first third
between lateral line and pectoral fin
origin; 2 subpectorals, ~~one over other~~,
upper close over lower and below
bases of lowest pectoral rays,
over first pectoral interval little

W. 16°52'45", 100 to 150 meters; N. 8°12' W. 18°49', 120 meters; N. 12°08' W. 20°53' 30", 163 meters).

Myctophum (Lampanyctus) alatus Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 244, figs. 161-162 (south of Canaries; Sierra Leone; Gulf of Guinea).

Myctophum (Lampanyctus) platum Zugmayer, Res. Camp. Sci. Monaco, vol. 35, 1911, p. 38 (Canaries, 1100 meters; south west of Azores, 2500 meters; off Azores, 2500 meters). — Barnard, Ann. South African Mus., vol. 21, pt. 1, 1925, p. 240 (off Cape Point and East London, 300 to 800 fathoms).

nearer second pectoral spot than first; 5 ventrals, second above and little posterior to first or not quite level with upper subpectoral; 1 supraventral, close below lateral line over ventral origin; anals 5 + 5 or 6, level, posteroanals all behind anal fin base; 3 supraanals, first and second at same level or little above second ventral, first over interval between third and fourth ventral, second behind vent and third or uppermost close below lateral line little before or over first anteroanal; 2 posterolaterals, in inclined line from behind last anteroanal and uppermost close

Myctophum spinosum (Steindachner)

Scopelus spinosus Steindachner, Sitz. Ber. Akad. Wiss. Wien, Math.-naturw. Classe, vol. 55, 1867, p. 711, pl. 3, figs. 4-a. China. — Lütken, Kon. Danske. Videnske. Selsk. Skrift. Kjöbenhavn, ser. 6, vol. 7, no. 6, 1892, p. 239, pl. 1, figs. 1-2 (west of Africa; Zanzibar; Bay of Bengal; north west of Australia; Ombai Straits).

Lasyscopelus spinosus Goode and Bean, Oceanic Ichth., 1895, p. 92 (compiled). — Jordan and Evermann, Bull. U. S. Nat. Mus., no. 47, pt. 1, 1896, p. 575 (compiled). — Gilbert, Bull. Bur. Fisher., vol. 23, pt. 2, 1903 (1905), p. 599 (south of Lanai; west of Oahu; west of Niihau; near Laysan; south of Oahu); Mem. Mus. Comp. Zool.,

below lateral line; 3 precaudals, in curve from lowest progressively to last close below end of lateral line. Supracaudal luminous scales 3, infracaudal 5.

D. IV, 11, first branched ray 2 in head; adipose fin 4; A. III, 15, first branched ray 2 1/8; caudal 1 1/4, deeply emarginate; least depth of caudal peduncle 3 1/8; pectoral 2 4/5; ventral 2 7/8.

Length 28 mm. (Brauer.)

Indian Ocean. According to Brauer known by its posteriorly inserted dorsal, show inserted midway between eye center and caudal base and anal origin opposite first fourth of dorsal base.

3920

Lampanyctus mexicanus (Gilbert)

Myctophum mexicanum Gilbert, Proc. U. S. Nat. Mus., vol. 13, 1890 (1891), p. 51. Albatross Station 3008 and 3009, off Lower California, 306 to 857 fathoms. Hannobrachium mexicanum Goode and Bean, Oceanic Ichth., 1895, p. 512 (reference). — Jordan and Evermann, Bull. U. S. Nat. Mus., No. 47, pt. 1, 1896, p. 563 (compiled). Myctophum (Lampanyctus) mexicanum Brauer, Zool. Anzeiger, vol. 28, Jan. 10, Dec. 20, 1904, p. 396 (diagnosis in key); Deutsch. Tiefsee Exped. Valdivia, vol. 5, Tiefsee-Fische, 1906, p. 167 (diagnosis in key).

3921

Lampanyctus mexicanus Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, 1928, p. 84 (diagnosis in key); Proc. U. S. Nat. Mus., vol. 78, 1929, p. 15, fig. 6 (type); Bull. Bingham Oceanogr. Collection, vol. 2, art. 4, Oct. 1931, p. 30, fig. 12 (N. 22°50'20" W. 109°48'15", 525 fathoms; N. 24°7' W. 108°40', 286 fathoms; types of Lampanyctus oculeus and Lampanyctus mexicanus).

3922

Myctophum oculeus Garman, Mem.
Mus. Comp. Zool., vol. 24, 1899, p. 260,
pl. 56, fig. 2. N. 4° to 32° W. 78° to 135°, 0
to 1772 fathoms; S. 0° 57' 30" W. 89° 3' 30",
421 fathoms.

Myctophum (Lampanyctus) oculeum
Brauer, Deutsch. Tiefsee Exped. Valdivia,
vol. 15, Tiefsee-Fische, 1906, p. 167 (part;
diagnosis in key).

Lampanyctus oculeus Parr, Bull. 3923
Bingham Oceanogr. Collection, vol. 3,
art. 3, 1928, p. 85 (note).

Depth 5 1/3; head 3 1/4, width 2 1/4.
Snout 9 in head from snout tip; eye
4 4/5, greater than snout or interorbital;
maxillary extends 1 1/5 eye diameters behind
hind eye edge though not quite to well
inclined hind preopercle edge, slender,
length 1 1/3 in head from snout tip;
interorbital 5 1/2, level. Gill rakers

4 + 14, lanceolate, slender, 1 1/4 in eye; gill filaments 1/2 gill rakers.

Scales 33 in lateral line to caudal base, enlarged; 3 above, 3 below, 14 predorsal forward to occiput. Scales very caducous, all fallen.

Small antorbital photophore close before front eye edge medially; 1 humeral, small, over lower opercular; upper opercular larger than lower, ow line from lower eye edge to lower subpectoral, lower close behind and below hind maxillary end; 3 equidistant branchiostegals; 5 pectorals, first interspace greatest, fourth spot elevated.

level with upper subpectoral over and little behind third ventral; 1 suprapectoral, on lateral line little behind first pectoral or close before lower subpectoral; 2 subopercles, first or lower little nearer upper than first ventral though well advanced from upper, close below hind angle of opercle which before pectoral fin base; 4 ventrals, second but slightly lower than supraventral and midway between interspace of first and third; 1 supraventral, low, at lower third between lateral line and ventral fin base; 5+5 anals, anteroanals with first little lower than others,

posteroanals all evidently behind anal fin base and continuous with precaudals; 3 supranals, first above interspace between third and fourth ventrals, second slightly higher or level with fourth pectoral and uppermost close below above or on lateral line slightly behind second or median and opposite first anteroanal; 2 posterolaterals, first or lower behind and little above last anteroanal and uppermost close above lateral line close before adipose fin; 4 precaudals, upper close above end of lateral line. Supracaudal luminous scales

and 3 paratypes, 84 to 94 mm.
in length, collected at Maricaban
Island in a school of Caesio.
Beyond this no suggestion of
the relationship is given.
am therefore quite interested
to locate the rather extensive
series of specimens enumerated
below. Though for the present
retaining them with or near
Caesio, they really greatly suggest
various abberant members of
the subfamily Anthiinae in the
Serranidae. The rostral papilla,
edentulous palate and filamentous
fins are all a combination of
characters valid generically.
The dentition, especially in the
arrangement of the canines,
approaches closely that of most

3, infracaudal 6 or 7, not elevated on rudimentary caudal rays).

D. III, 10, I, first branched ray 1 3/5?; in total head length; adipose fin 6; A. III, 13, I, first branched ray 1 3/4?; caudal 1 1/5?, forked; least depth of caudal peduncle 3 2/3; pectoral ?; ventral 2.

Brownish, scale pockets darker. Iris gray. Fins pale to whitish, caudal base dark.

3928

76343 U.S.N.M.

Albatross Station (3008). Length 52 mm. Type of Myctophum mexicanum.

1 example. Malapascua Island. March 16, 1909. Length 104 mm. [1372.]

2 examples. Maribojoc Bay, Maribojoc, Bohol Island. March 26, 1909. Length 96 to 100 mm.

1 example. Tapiantana Island. September 13, 1909. Length 75 mm. [1923.]

16256. Jemabal Island, Jolo. September 18, 1909. Length 93 mm.

6900 to 6903. Danawan and Si Amil Islands, Borneo. September 26, 1909. Length 88 to 97 mm.

8915. Mabul Island. September 29, 1909. Length 53 mm.

9505, 21429. Dodepo and Pasejogo Islands, Celebes. November 16, 1909. Length 66 to 78 mm. [2045.] 4 examples.

3929

Lampanyctus microchir Gilbert

Lampanyctus microchir Gilbert, Mem.
Carnegie Mus., vol. 6, no. 2, Aug. 1913, p. 101.
Suruga Bay, in 300 fathoms. — Parr, Bull.
Bingham Oceanogr. Collection, vol. 3, art. 3,
Dec. 1928, p. 85 (reference).

Depth 6 1/5; head 3, width 2 2/3.
Snout 6 in head from snout tip; eye
5, greater than snout, 1 1/4 in interorbital;
maxillary extends 2 eye diameters
behind eye though not quite to well
inclined hind preopercle edge, expansion
2 in eye, length 1 1/4 in head from
snout tip; interorbital 3 1/2, little
convex.

3930

Scales 34 in lateral line.
Small antorbital photophore
below level of hind nostril;
small humeral photophore?; 2
operculars, upper about level
with lower eye edge and pectoral
fin origin; branchiostegals?;
5 pectorals, fourth elevated
above third on level of lower
pectoral ray, first interspace
longest; 1 suprapectoral on
lateral line; 2 subpectorals,
lower below upper, which before
middle of pectoral base; 5
ventrals, second elevated above
and in advance of first, first,
third, fourth and fifth equidistant
and equidistant from median ventral

East Indies, Philippines.

Bleeker had a single example but 93 mm. long. My examples ~~show much shorter spots~~ the dark bands on the back pale and the caudal much more deeply forked. Weber reports 18 examples 80 to 120 mm.

[1281] Philippines?

Length 213 mm.

line; 1 supraventral on lateral line somewhat before ventral fin base; 6 + 6 anals, fifth anteroanal elevated and others on same level, first interspace longer than following ones, posteroanals behind anal fin base; 3 supraanals, first and second equally elevated, second over or slightly before fourth ventral; third on lateral line below middle of dorsal fin; 3 precaudals, first above first caudal ray, lower than last postero anal, second elevated little behind oblique line joining first and third, distance from first little over half space

least depth of caudal peduncle 3 1/8 to 3 2/5; pectoral 1 to 1 1/5; ventral 1 3/4.

Back heliotrope purple down until midway on side, lower side and under surface white. Gray white line from each side of occiput along back above to last dorsal rays. Second gray white line from hind nostril back to supra-scapula and then horizontally back to bases of upper caudal rays. Dorsals and caudal yellowish brown, end of each dark caudal lobe with dusky brown blotch about size of eye. Other fins whitish. Iris yellowish white.

from third, which above and little behind, in contact with lateral line. Supracaudal luminous scales 3, infracaudals 4. No accessory photophores.

D. 14, fin height 1 2/3 in head; A. 17, fin height 2 1/2; caudal damaged, forked; least depth of caudal peduncle 4 1/4; pectoral ?; ventral 2 1/2 ?

Dusky to blackish generally. Fins paler to light brown.

74468 U.S.N.M. Suruga Bay, Japan. Albatross Collection (5064). Length 20 mm; Type:

venules, edge entire. Gill rakers 9 + 25, lanceolate, 1 3/5 in gill filaments, which 1 1/5 in eye.

Scales 69 to 72 in lateral line to caudal base and 7 or 8 more on latter; 8 scales above lateral line, 16 below, 30 predorsal forward opposite front pupil edge, 5 rows on cheek. Suprascapula entire. Scales with 10 or 11 basal radiating striae; apical denticles 67, with 11 transverse series of basal elements; circuli very fine.

D. X, 14, I, fourth spine 2 1/10 to 2 1/8 in total head length, first ray 2 4/5; A. III, 12, I, third spine 2 7/8 to 3, first ray 3 to 3 1/10; caudal 1 1/5 to 1 1/4, well forked;

3933

Lampanyctus micropterus (Brauer)

Myctophum (Lampanyctus) micropterum Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 239, text fig. 157. N. 0°26'3" W. 6°32'; Gulf of Guinea; N. 1°51' E. 0°31'2"; N. 2°36'5" E. 3°27'5"; N. 3°10' E. 5°28'5"; S. 1°56'7" E. 7°40'6"; S. 0°58'2" E. 99°43'2", off west Sumatra; S. 4°5'8" E. 73°24'8", north of Chagos; S. 6°19'3" E. 73°18'9"; S. 2°43'8" E. 61°12'6", Seychelles; S. 3°24'6" E. 58°38'1"; S. 2°56'6" E. 67°59', 600 to 800 meters, west of Chagos. — Murray and Hjort, The Depths of the Ocean, 1912, p. 613 (N. 31°20' W. 35°7', 3886 meters, Gran Canaria to Fayal; N. 31°24' W. 34°47'). — Pappenheim,

Deutsch. Südpolar Exped., vol. 15, Zool. 7, 1914, p. 197 (N. 20°41' W. 31°53', 3000 meters).

3934

Lampanyctus micropterus Weber and Beaufort, Fishes Indo Austral. Archipelago, vol. 2, 1913, p. 154 (compiled).

— Parr, Bull. Bingham Oceanogr. Collection, vol. 3, artt. 3, Dec. 1928, p. 85 (note). — Norman, Discovery Rep., vol. 2, 1930, p. 331 (S. 2°49'30" W. 9°25'30", 124 meters).

Lugetophum (Lampanyctus) oculeum (not Garman) Brauer, Zool. Anzeiger, vol. 28, 1904, p. 396 (Valdivia collections). —

Pappenheim, Deutsch. Südpolar Exped., vol. 15, Zool. 7, 1914, p. 196 (S. 14°3' W 19°10', 1900 meters; S. 24°55' W. 1°18', 1500 meters; S. 11°19' W. 18°34', 1200 meters).

3935

Depth 5 2/3 to 5 3/4; head 3 to 3 1/2, width 2 2/5 to 2 2/3. Snout 5 to 5 1/4 in head from snout tip; eye 4 1/5 to 5, greater than snout or interorbital; maxillary reaches little over eye diameter behind eye though not quite to hind preopercle edge,

Lampanyctus microptenus (Brauer)

Myctophum (Lampanyctus) microptenum

Brauer, Deutsch. Tiefsee Exped. Valdivia,

vol. 5, Tiefsee-Fische, 1906, p. 239, text

fig. 157. Gulf of Guinea, west coast of

Sumatra; north of Chagos Archipelago;

east of Seychelles; 800 to 600 meters west

of Chagos Archipelago. — Pappenheim,

Deutsch. Südpolar Exped., vol. 15, Zool. 7,

1914, p. 197 (n. w. Cape Verde Islands, in 3000 meters).

3936

slender, length 1 1/3 to 1 1/2 in head; interorbital 4 2/5 to 4 1/2; low. Gill rakers 4 + 7, lanceolate, equals eye, subequal with gill filaments.

Scales 35 in lateral line, especially enlarged on caudal peduncle. Scales very caducous, most all fallen.

Small antorbital luminous organ close along lower front eye edge; 2 opercular photophores, upper little larger and about on line with lower eye edge and upper subopercle; 3 equidistant veiled branchiostegals; 5 pectorals, fourth well elevated above pectoral fin base though opposite middle of space between third and fifth and

D. 5365. Cape Santiago Light, N. 73° W., 6.7 miles (13° 44' 24" N., 120° 45' 30" E.), Balayan Bay, Luzon, in 214 fathoms. February 22, 1909. Length 90 to 94 mm. 2 examples.

D. 5280. Malavatuan Island (N.), S. *60° W., 6.1 miles (13° 55' 20" N., 120° 25' 55" E.), China Sea vicinity of southern Luzon, in 193 fathoms. July 17, 1908. Length 98 mm.

interspace between first and second greatest; 1 supraventral, close below lateral line and well before 2 subpectorals, of which upper before and opposite middle of pectoral base and lower midway between upper and well well before second pectoral; 5 ventrals, second elevated though not quite high as fourth pectoral or first supraanal and little before first ventral; 1 supraventral on or close above lateral line opposite ventral fin origin; 5+6 anals, posteroanals behind anal fin base; 3 supraanals, first over or little behind fourth ventral, second little lower to level and opposite anal

fin origin, third on or close above lateral line little before first anteroanal; 2 posteroanals, lower little before upper and in inclined line with upper on lateral line and last anteroanal; 3 precaudals in inclined line, lowest near tail edge at lower rudimentary caudal rays and uppermost at end of lateral line. Precaudal supracaudal luminous plates 3, infracaudals 5.

D. III, 12, first branched ray 1 3/4 in total head length; adipose fin 4; A. III, 12, first branched ray 1 2/3 to 2; caudal 1 1/3? to 1 2/5, deeply forked;

3939

least depth of caudal peduncle 3 1/3;
pectoral ?; ventral 2.

Brown, scale pockets darker.
Iris slate gray. Opercle and belly
blackish. Fins whitish.

Atlantic, Indian and Antarctic
Oceans.

D.5604. Bilatu (town), N. 26° W., 8.7
miles (N. 0° 22' 30" E. 122° 42' 30"), Gulf of
Tomini, Celebes. November 16, 1909. Length
31 mm. 2 examples.

3940

Lampanyctus nannochir (Gilbert)

Myctophum nannochir Gilbert, Proc. U. S. Nat. Mus., vol. 13, 1890, p. 51. Pacific coast of United States, 266 to 685 fathoms.

Nannobrachium nannochir Gilbert, Rep. U. S. Fish Comm., pt. 19, 1893 (1895), p. 400 (type; North Pacific; Bering Sea). — Jordan and Evermann, Bull. U. S. Nat. Mus., no. 47, pt. 1, 1896, p. 562 (part).

Lampranyctus nannochir Gilbert, Mem. Carnegie Mus., vol. 6, no. 2, Aug. 1913, p. 100 (southern Okhotsk Sea; southeast of Cape Patience, Sagalin). — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, dec. 1928, p. 86 (note); Proc. U. S. Nat. Mus., vol. 76, 1929, p. 18, fig. 8 (type).

Depth 5 to 5 1/5; head 3 1/3 to 3 2/5, width 2 3/5 to 2 2/3. Snout 5 3/4 to 6 in head from snout tip; eye 4 to 4 2/5, greater than snout, 1 to 1 1/8 in interorbital; maxillary extends little over eye diameter behind hind eye edge though not quite to well inclined hind preopercle edge, slender, length 1 1/4 to 1 2/5 in head from snout tip; interorbital 4 to 4 1/8, low, depressed. Gill rakers 6 + 14, lanceolate, slender, equal eye, 1 2/3 in gill filaments.

Scales 37 in lateral line to caudal base, enlarged; 4 above, 4 below, 14 predorsal. Scales all very

Lampanyctus nannochir (Gilbert)

Myctophum nannochir Gilbert, Proc. U. S. Nat. Mus., vol. 13, 1890, p. 51. Pacific coast of United States, in 266 to 685 fathoms.

Lampanyctus nannochir Gilbert, Mem. Carnegie Mus., vol. 6, no. 2, Aug. 1913, p. 100 (southern Okhotsk Sea; southeast of Cape Patience, Sagalin). — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 86 (note); Proc. U. S. Nat. Mus., vol. 76, 1929, p. 18, fig. 8 (type).

Nannobrachium nannochir Jordan and Evermann, Bull. U. S. Nat. Mus., no. 47, pt. 1, 1896, p. 562 (part). — Gilbert, Rep. U. S. Fish Com., pt. 19, 1893 (1895), p. 399-400 (type; North Pacific; Bering Sea). —

very caducous, all fallen.

Single small antorbital photophore, nearly median on front eye edge; 2 opercular, upper larger and in line with lower eye edge, and upper subpectoral, lower veiled, little below and behind hind maxillary end; 3 veiled equidistant branchiostegals; 5 pectorals, first interspace greatest, fourth spot above and slightly posterior to third and nearly level with upper subpectoral; 1 suprapectoral little nearer lateral line than pectoral fin origin, close before subpectorals in vertical; 2 subpectorals, one above

other, close, upper-opposite or before
bases of median pectoral fin rays;
4 ventrals, at same level, at
gradually decreasing intervals,
first interspace largest; 1 supraventral,
nearly midway between lateral
line and ventral fin origin;
7 + 7 anals, posteroanals behind
anal fin base; 3 supraanals,
in very slightly curved to nearly
straight series, first or lowest
close behind and little higher
than last ventral; second
slightly nearer to lower than
to upper supraventral which
well below lateral line or at
upper 2/5 of space; 1 posterolateral
behind last anteroanal and below

General color of head and shoulders deep olivaceous with smoky orange spots. Scarlet of side in large blotch extending across belly. dorsal margin light blue over orange, scarlet shades at basal portion of central part of fin, spots on membranes brown in front edged with orange, became darker posteriorly and as very dark diagonal bands on hind part of fin. Caudal margin blue over submarginal olive, rest of fin blackish like caudal peduncle and adjacent part of body. Anal margin blue, scarlet shades at base and general color like dorsal. Pectoral rays clear. Ventral membranes scarlet.

1953. Candaraman Island, north Balabac Strait. January 4, 1909.

Length 164 mm.

lateral line same space as upper supraventral; 3 precaudals, well separated from posteroanals in nearly straight inclined row to upper, which little below end of lateral line. Supracaudal luminous scales 4, infracaudal 10.

D. III, 9, I, first branched ray 1 3/4? in total head length; adipose fin 4; A. III, 12, I, first branched ray 2 to 2 1/8; caudal subequal with head, forked; least depth of caudal peduncle 3 to 3 2/3; pectoral ?; ventral 2 1/3 to 2?

Brown, scale pockets often dusky. Opercle and inside pharynx dusky to blackish. Iris dark gray. Fins brownish.

Pacific Ocean. In combination with both supracaudal and infracaudal luminous bodies and in the photophores of the supraanal, supraventral, suprapectoral and supracaudal - distinctly below the lateral line this species differs from all the others of its genus.

16186. Mantacao Island. April 8, 1908. Length 145 mm.

11227. Mantaquin Bay, eastern Palawan. April 2, 1909. Length 122 mm.

17636, 18618 [11197], 18619 [11194]. Mompog Island. March 3, 1909. Length 132 to 138 mm. In 11197 distinct bars in middle portion of back. First yellowish above middle of pectoral, then 3 or 4 darker bars alternated with yellowish or paler, then ground color. In 11194 no black blotch in front of dorsal.

7489, 7490, 21372. Murcielagos Bay, Mindanao. August 21, 1909. Length 130 to 168 mm.

4337 [D. 5337]. Observatory Island, S. 80° E., 13.8 miles (11°34' N., 119°26' E.). December 20, 1908. Length 147 mm.

D. 4392.

3946

Length 23 mm.

D. 4758.

Length 36 mm.

D. 4759. N. 53° 5' W. 138° 31', off Queen Charlotte Islands. In 2000 fathoms. May 20, 1906. Length 25 to 34 mm. 13 examples.

D. 4760.

Length 21 to 48 mm. 5 examples.

D. 4763.

Length 41 mm.

D. 4767.

Length 44 mm.

Very poorly preserved.

Explanation of plates

all drawn by Richard Bloomer Farley.

1. Dampieria melanotaenia (Bleeker)
   Variation of color markings.
2. Dampieria melanostigma new species
   Type.
3. Dampieria melanostigma new species
   Variation of color markings.
4. Dampieria lineata new species
   Type.
5. Pseudochromis polynemus new species
   Type.
6. Pseudochromis moorei new species
   Type.
7. Priacanthus cruentatus (Lacépède)
   Young.
8. Priacanthus tayenus Richardson
   Young.
9. Lutjanus vivulatus (Cuvier)
   Young.
10. Lutjanus flavipes (Valenciennes)
    Variation of young.
11. Lutjanus ~~sepilarus~~ (Bennett)
    Variation of color markings.
12. Lutjanus kasmira (Forsskål)
    Variation of color markings.
13. Lutjanus erythropterus Block
    Young.

3947

D. 4774.

· Length 58 to 71 mm.

3 examples.

D. 4775.

Length 38 mm.

44291 U. S. N. M.

Albatross Collection. Length 66 to 125 mm. Types of Myctophum nannochir.

54196 U. S. N. M.

Albatross Collection (3308). Length 72 to 100 mm. 2 examples.

54221 U. S. N. M.

Albatross Collection (3342). Length 125 mm.

59407 U. S. N. M.

Albatross Collection (3308). Length 80 to 92 mm. 2 examples.

Type

15. Plectorhinchus nigrus (Cuvier)

Young examples.

16. Plectorhinchus diagrammus (Linnaeus)

Variation of color markings.

17. Plectorhinchus diagrammus (Linnaeus)

Variation of color markings.

18. Plectorhinchus lineatus (Linnaeus)

Variation of color markings.

19. Plectorhinchus chaetodonoides Lacépède

Variation of color markings.

20. Plectorhinchus pictus (Thunberg)

Variation of color markings.

21. Plectorhinchus pictus (Thunberg)

Variation of color markings.

22. Scolopsis bilineatus (Bloch)

Young examples.

23. Therapon jarbua (Forskål)

Variation of color markings.

24. Therapon jarbua (Forskål)

Variation of color markings.

25. Therapon cancellatus (Cuvier)

Variation of color markings.

26. Pelates quadrilineatus (Bloch)

Variation of color markings.

3948

76495 U.S.N.M.

Albatross Collection (3603). Length 65 to 80 mm. 2 examples.

60174 U.S.N.M.

Albatross Collection (4257). Length 33 to 60 mm. 4 examples.

60185 U.S.N.M.

Albatross Collection (4267). Length 95 to 115 mm. 2 examples.

60175 U.S.N.M.

Albatross Collection (4235). Length 34 to 55 mm. 2 examples.

D. 4759. 53° 5' N. 138° 31', off
Queen Charlotte Islands, in 2000 fathoms.
May 20, 1906.
Length 25 to 34 mm. 13 examples.

3949

Lampanyctus leucopsarus (Eigenmann and Eigenmann)

Myctophum (Stenobrachius) leucopsarum Eigenmann and Eigenmann, Proc. California Acad. Sci., ser. 2, vol. 3, 1890, p. 5. Off Point Loma, California, from Sebastodes mouth.

Hannobrachium leucopsarum Gilbert, Rep. U. S. Fish Comm., pt. 19, 1893 (1895), p. 399 (Bearing Sea north of Unalaska, 225 to 1625 fathoms; off Washington and California, 516 to 455 fathoms).

— Jordan and Evermann, Bull. U. S. Nat. Mus., no. 47, pt. 1, 1896, p. 562 (compiled).

— Townsend and Nichols, Bull. Amer. Mus.

Lampanyctus güntheri Goode and Bean

Lampanyctus güntheri Goode and Bean, Oceanic Ichth., 1895, p. 79, pl. 24, fig. 90. Gloucester fleet. — Waite, Trans. New Zealand Inst., vol. 42, 1909, p. 372 (Kermadec Islands). — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, dec. 1928, p. 82 (compiled).

Myctophum (Lampanyctus) güntheri Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 5, Tiefsee-Fische, 1906, p. 166 (diagnosis in key).

Nat. Hist. New York, vol. 52, art. 1, May 16, 1925, p. 10 (South west of Santa Barbara Islands, 451 fathoms; Station 5694, 640 fathoms; Lat. 33° to 36°, 485 fathoms).

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Myctophum leucopsarum Goode and Bean, Oceanic Ichth., 1895, p. 512 (reference; said "to belong to Hamobrachium").

Tiefsee Exped. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 238, fig. 156 (example in Berlin Museum).

Lampanyctus leucopsarum Gilbert, Proc. U. S. Nat. Mus., vol. 48, 1915, p. 315 (off San Diego, Catalina Island, San Miguel Island, Monterey Bay, California; 32 to 1083 fathoms).

3950

Nat. Hist. New York, vol. 52, art. 1, May 16, 1925, p. 10 (South west of Santa Barbara Islands, 451 fathoms; Station 5694, 640 fathoms; Lat. 33° to 36°, 485 fathoms).

Myctophum (Lampanyctus) leucopsarum Brauer, Zool. Anzeiger, vol. 28, 1904, p. 396 (diagnosis in key); Deutsch. Tiefsee Exped. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 238, fig. 156 (example in Berlin Museum).

Lampanyctus leucopsarum Gilbert, Proc. U. S. Nat. Mus., vol. 48, 1915, p. 315 (off San Diego, Catalina Island, San Miguel Island, Monterey Bay, California; 32 to 1083 fathoms).

3951

Lampanyctus leucopsarus Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, 1928, p. 86 (note); Proc. U. S. Nat. Mus., vol. 76, 1929, p. 18 (type).

Myctophum nannochir (part) Gilbert, Proc. U. S. Nat. Mus., vol. 13, 1890, p. 51. (Pacific coast United States, 266 to 685 fathoms).

Nannobrachium nannochir Gilbert, Rep. U. S. Fish Comm., pt. 19, 1893 (1895), p. 400 (north Pacific and Bering Sea).

Depth 4 1/5 to 4 1/2; head 3 1/6 to 3 3/5, width 2 2/5 to 2 3/4. Snout 5 3/5 to 10 in head; eye 3 3/5 to 4, greater than snout, greater than interorbital in young to subequal with age; maxillary extends little less than eye diameter behind eye though not quite to inclined hind maxillary edge, slender, length 1 2/5 to 1 1/2 in head; interorbital 3 to 3 1/2, level. Gill rakers 5+12, lanceolate, slender, 1/8 in eye; gill filaments 3/5 gill rakers.

Scales 36 in lateral line, enlarged; 3 above, 3 below. Caudal base scaly. Scales usually very caducous, all fallen in most specimens.

6595. Maricaban Island near Sepoc. September 21, 1908. Length 230 mm.

14233. Marivelex wharf. January 30, 1909. Length 99 mm.

12140, 12142, 12144, 12146. Masamat Bay. Guinalasag Island. June 12, 1909. Length 187 to 210 mm.

15966. Masbate Reef. April 20, 1908. Length 219 mm.

17638. Mompog Island. March 3, 1909. Length 161 mm.

9035. Nabatas Point. July 24, 1909. Length 245 mm.

6609, 12507. North west Verde Island. July 22, 1908. Length 196 to 250 mm.

small antorbital photophore
nearly median on front eye edge;
2 operculars, upper little larger
on level with lower eye edge and
line passing between subpectorals,
lower close behind and below hind
maxillary end; 3 equidistant veiled
branchiostegals; 5 pectorals, of lower
4 photophores first and third interspaces
subequally longer than second or median,
fourth spot elevated level with pectoral
fin origin over and little behind third
pectoral; 1 suprapectoral, about upper
2/5 between lateral line and pectoral
fin origin, over subpectorals; 2 subpectorals,

first or lower close below upper,
well before second pectoral, upper
opposite lower median pectoral fin
ray bases; 4 ventrals, level, first
interspace little longer than others;
1 supraventral, midway between
lateral line and first ventral;
6 + 7 anals, anteroanals slightly arched,
posteroanals behind anal fin base;
3 supraanals, in oblique line from
last ventral photophore, first or
lowest little closer last ventral
photophore than median which
also little closer to first than
third or uppermost which rather

close below lateral line little before first anteroanal; 1 posterolateral, above and little posterior to sixth anteroanal; 4 precaudals arched on lower caudal lobe base with first at lower rudimentary caudal rays then other gradually higher with fourth rather well below lateral line. Supracaudal luminous scales 6 or 7, infracaudals 7 to 9.

D. I, $\frac{III}{=}$, 10, $\frac{I}{=}$ or $\frac{III}{=}$, 11, $\frac{I}{=}$, first branched ray 1 2/5 in head; adipose fin 4; A. $\frac{III}{=}$, 11, $\frac{I}{=}$ to $\frac{III}{=}$, 13, $\frac{I}{=}$, first branched ray 1 4/5 to 2 1/10; caudal 1 1/10, well forked; least depth of caudal peduncle 2 1/4 to 3, well forked; pectoral 2 7/8; ventral 2 1/4.

6850. Little Santa Cruz Island. January 2, 1909. Length 220 mm.

11135, 11136. Lode Bay, Abstacado Island. March 13, 1907. Length 225 to 237 mm.

8999. Inactan Cove. April 6, 1908. Length 165 mm.

7876. Macubabo Island. June 14, 1907. Length 183 mm.

6286. Malapascua Island. March 16, 1907. Length 218 mm.

12021, 12529. Malcochin Harbor. December 19, 1908. Length 185 to 187 mm.

7625. Manila market. March 20, 1908. Length 146 mm.

6180. Mansalay, Mindoro. June 4, 1908. Length 243 mm.

5444, 5115. Mantacao Island. April 8, 1908. Length, 175 to 218 mm.

3956

Brown, scale pockets all darker.
Opercles and inside gill opening
blackish. Iris gray. Fins pale,
often whitish.

Pacific Ocean.

7925, 10879. Limbones Cave, Luzon.
February 8, 1909. Length 193 to 228 mm.
Soft dorsal and lower caudal
lobe reddish brown, caudal lobe
yellow. Lower fins yellow.

18538. Little Santa Cruz Island.
May 28, 1908. Length 203 mm.

3957

41915 U.S.N.M. Off Point Loma, San Diego, California. C. H. Eigenmann. No. 155. Length 52 to 90 mm. 7 examples, all very poorly preserved.

41916 U.S. N.M. Off Point Loma. C. H. Eigenmann. Length 80 to 95 mm. Types of Myctophum (~~H~~tenobrachius) leucopsarum. 7 examples. Poorly preserved.

46626 U.S.N.M. Albatross Collection (3073). Length 90 mm.

46661 U.S.N.M. N. 34°11'30" W. 120° 31'. In 322 fathoms. Albatross Collection (2903). Length 63 mm.

46664 U.S.N.M. N. 33°49'45' W. 119° 24'30". In 877 fathoms. Albatross Collection (2980). Length 85 mm.

22886. Tataan, Tawi Tawi.
March 19, 1909. Length 114 mm.

7145. West coast Palawan Island.
November 18, 1908. Length 195 mm.

6977, 6978. West coast Babtan
Island. November 6, 1908. Length
197 to 213 mm.

14086. Ubi, Bouro Island, Dutch
East Indies. December 9, 1909. Length
203 mm.

56227 U. S. N. M. Bacan. Bureau
of Fisheries (3420). Length 169 mm.

57977 U. S. N. M. Zamboanga.
Dr. E. A. Mearns. Length 187 to
203 mm. 7 examples.

3958

46665 U.S.N.M.

Albatross Collection (3074). Length 105 mm.

46666 U.S.N.M. N. 47° 22' W. 125° 41'.

In 85-9 fathoms. Albatross Collection (3075).

Length 110 mm.

46733 U.S.N.M.

Albatross Collection (2893). Length 79 mm.

53952 U.S.N.M.

Albatross Collection (2890). Length 35 mm.

53953 U.S.N.M.

Albatross Collection (2859). Length 104 mm.

48682 U.S.N.M.

Albatross Collection (3325). Length 91 mm.

53954 U.S.N.M.

Albatross Collection (3479). Length 80 mm.

54189 U.S.N.M.

Albatross Collection (3343). Length 63 to 116 mm. 4 examples.

54530 U.S.N.M.

Albatross Collection (2925). Length 100 mm.

60177 U.S.N.M.

Albatross Collection. Length 90 mm.

60184 U.S.N.M.

Albatross Collection (4255). Length 82 to 113 mm. 6 examples.

61529 U.S.N.M.

Albatross Collection (3325). Length 95 mm.

64328 U.S.N.M.

Albatross Collection (4538). May 31, 1904. Length 46 mm. Host of Lernaeenicus medusaeus Wilson.

3960

76493 U.S.N.M.

Albatross Collection (3601). Length 78 to 96 mm. 2 examples.

76494 U.S.N.M.

Albatross Collection (3604). Length 100 mm.

76496 U.S.N.M.

Albatross Collection (3604). Length 73 mm.

77497 U.S.N.M.

Albatross Collection (4412). Length 54 mm.

87560 U.S.N.M.

Albatross Collection. Length 92 mm's.

3961

Lampanyctus macdonaldi (Goode and Bean)

Hamobrachium macdonaldi Goode and Bean, Oceanic Ichth., 1895, p. 94, pl. 29, fig. 110. N. 39° 48' W. 70° 36', 551 fathoms; N. 28° to 40° W. 66° to 87°, 515 to 1467 fathoms. — Jordan and Evermann, Bull. U. S. Nat. Mus., No. 47, pt. 1, 1896, p. 563 (compiled). — Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1911 (1912), p. 569 (N. 39° 44' 30" W. 71° 04', 1022 fathoms).

Lampanyctus macdonaldi Parr, Proc. U. S. Nat. Mus., vol. 76, 1929, p. 20, fig. 9 (type).

3962

Depth 4 4/5 to 5; head 3 1/4 to 3 2/5, width 2 1/4 to 2 2/3. Snout 5 1/2 to 6 in head from snout tip; eye 4 1/4 to 4 2/3, greater than snout, 1 to 1 1/8 in interorbital; maxillary extends 1 2/3 to 1 3/4 eye diameters behind hind eye edge but not quite to well inclined hind preopercle edge, slender, length 1 1/3 in head from snout tip; interorbital 3 2/3 to 4 1/8, low. Gill rakers 7+18, lanceolate, slender, 1 1/8 in eye, twice gill filaments.

Scales 36 or 37 in lateral line to caudal base, enlarged, 3 above, 4 below, 16 predorsal forward to head. Scales very caducous, all lost.

Antorbital photophores 2, at front, orbital edge, small and well separated; cheek with photophores nearly level with lower eye edge and not quite eye diameter behind eye, also another little lower and less distant than eye; 2 opercular, upper larger and on line passing from lower eye edge between subpectoral, lower close below and behind hind maxillary end; 3 equidistant veiled branchiostegals; 5 pectorals, first interspace longest, fourth spot elevated level with upper subpectoral and over or little posterior to third

to which nearer than to fifth; 1
suprapectoral, midway between
lateral line and pectoral fin origin
before subpectorals and little behind
first pectoral; 2 subpectorals, one
above other or lower little posterior
below pectoral fin, upper close below
pectoral fin origin; 4 ventrals,
equidistant, on same level; 1 supraventral,
midway or little above middle in space
between lateral line and ventral fin
base; 6 or 7+7 anals, anteroanals
equidistant and slightly arched
upward, posteroanals behind anal
fin base and contiguous with precaudals;

3 supraanals, first lowest or
or above second ventral interspace
or over third ventral photophore,
second slightly higher, well behind
last ventral and high as pectoral
fin origin, third rather close below
lateral line over and slightly posterior
to second supralateral or first
anteroanal; 2 posterolaterals, lower
slightly above median supraanal
behind last anteroanal and upper
rather close below lateral line
opposite adipose fin; 4 precaudals,
arched slightly along lower lobe
of caudal fin base and fourth

3966

close below end of lateral line.
above or slightly anterior to third.
Supracaudal luminous plates 3,
infracaudal 8. Sometimes luminous
scale at front of adipose fin.

D. III, 10, I to IV, 11, I, first branched ray 1 1/4 to 1 4/5 in head; adipose fin 2 2/5 to 2 3/5; A. III, 12, I or III, 13, I, second branched ray 1 2/3 to 1 4/5; caudal 1 1/4 to 1 1/2, forked; least depth of caudal peduncle 2 3/5 to 3; pectoral 2 1/5? to 2 2/5; ventral 1 4/5 to 2 1/4?

Brown, scale pockets darker. Inside gill opening blackish. Iris dark gray. Fins brownish, whitish

3967

in small examples.

Atlantic Ocean.

1225

19979. Cebu market. September 3, 1909. Length 74 mm.

10420, 10421. East side Verde Island. July 22, 1908. Length 175 to 193 mm.

9599. Hermana Mayor Island, Luzon. May 8, 1909. Length 174 mm.

5583. Jolo market. February 8, 1908. Length 183 mm.

A426, A425. Jolo market. March 6, 1906. Length 144 mm.

9000. Mactan Cove. April 6, 1908. Length 193 mm.

11238. Mactan Island. March 25, 1909. Length 181 mm.

15676. Near Palag Bay. June 16, 1909. Length 117 mm.

28837 U.S.N.M. N. 39° W. 70°

Bureau of Fisheries (954). Length 157 mm.

28840 U.S.N.M. N. 39° W. 70°

Bureau of Fisheries (953). Length 70 mm.

33526 U.S.N.M. N. 39° W. 71°

Bureau of Fisheries (2094). Length 83 to 128 mm.
5 examples.

35411 U.S.N.M. N. 39° W. 71°

Albatross Collection (2181). Length 105 mm.

35445 U.S.N.M. N. 39° W. 71°

Bureau of Fisheries. Length 155 mm.
Type of Hannobrachium macdonaldi.

35539 U.S.N.M. N. 39° W. 71°

Bureau of Fisheries (2202). Length 85 to 120 mm.
2 examples.

35557 U.S.N.M. N. 39° W. 71°

Albatross Collection (2204). Length 115 mm.

35616 U.S.N.M. N. 39°39'45" W. 71°35'15".
Albatross Collection. Length 81 mm.

38187 U.S.N.M. N. 39° W. 73°
Albatross Collection. Length 100 mm.

39478 U.S.N.M. N. 39° W. 70°
Albatross Collection (2553). Length 119 mm.
Paratype of Hammobrachium macdonaldi.

39481 U.S.N.M. N. 39°51' N. 70°17'.
Albatross Collection (2549). Length 120 mm.

43843 U.S.N.M. N. 39°57'6" W. 69°16'.
Fish Hawk Collection: Length 115 mm.

43844 U.S.N.M. N. 37° W. 74°
Albatross Collection. Length 118 to 122 mm.
2 examples.

43845 U.S.N.M. N. 38°47'20" W. 72°37'.
Albatross Collection (2103). Length 96 mm.

43846 U. S. N. M. N. 40°53'30" W. 66°
24'20".
Albatross Collection (2530). Length 118mm.

43847 U. S. N. M. N. 39°50' W. 70°26'.
Albatross Collection (2680). Length 93mm.

43848 U. S. N. M.
Albatross Collection (2553). Length 62mm.

43850 U. S. N. M. N. 38° W. 72°
Albatross Collection (2102). Length 104mm.

43851 U. S. N. M. N. 37°20'42" W. 74°17'36".
Albatross Collection . Length 87 to 113mm.
3 examples.

3971

Lampanyctus idostigma Parr

Lampanyctus idostigma Parr, Bull. Bingham Oceanogr. Collection, vol. 2, art. 4, Oct. 1931, p. 32, fig. 13. N. 24° 7' W. 108° 40', 286 fathoms; N. 16° 14' W. 99° 36' 30", 625 fathoms; N. 11° 5' W. 89° 20' 45", 300 fathoms.

Depth 6; head 3 1/3. Snout 6 1/3 in head from snout tip; eye 6 1/3, equals snout; maxillary extends nearly 2 eye diameters behind eye, length 1 1/2 in head from snout tip; interorbital low, eye impinging on upper profile.

No photophore at shoulder; 5 pectorals, fourth over third, elevated till level with interspace between

subpectorals; 1 suprapectoral close below lateral line and well before subpectorals, which one above other, before second pectoral and upper close before pectoral fin base; 4 ventrals, elevation of second barely perceptible; 1 supraventral, nearly midway between lateral line and ventral fin base; anals 5 or 6 + 5 to 7, posteroanals all behind anal fin base; 3 supraanals in broadly angulate row, first lower than supraventral and over third ventral,

second and third form straight
line very obliquely to last ventral,
second level with supraventral close
before first anal, third close
below lateral line well behind
first anteroanal to above interval
between second and third anteroanals;
2 posterolaterals, in inclined line
with last anteroanal, upper close
below lateral line; 4 precaudals,
continuous with posteroanals, second
to fourth broadly angulate with
last spot close below end of lateral

line, over third which well behind second. Supracaudal luminous scales 3, infracaudal 3.

D. 13, I; A. 17, I, inserted below last 2/5 of dorsal base; least depth of caudal peduncle 3 1/5 (1) in total head length; pectoral 3 1/8; ventral 2 4/5.

Length without caudal 76 mm. (Parr.)

Off western Mexico.

3975

Lampanyctus niger (Günther)

Hammobrachium nigrum Günther, Rep. Voy. Challenger, vol. 22, 1887, p. 199, pl. 52, fig. B. South of Philippines in N. Lat. 4°33' E. Long. 127°6, in 500 fathoms.

Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, 1903 (1905), p. 591 (Kaiwi Channel, 411 to 460 fathoms).

Vidensk. Meddel. Kjöbenhavn, vol. 86, 1928, p. 69 (type).

Myctophum (Lampanyctus) nigrum

Zool. Anzeiger, vol. 28, Nr. 10, Dec. 20, 1906, p. 396 (diagnosis in key); Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 242, text fig. 159 (Gulf of Guinea, west of Cape Colony, north of New Amsterdam, Chagos Archipelago, Gulf of Aden). — Pappenheim,

N. 1°51' E. 0°31'2"; S. 31°21'1" E. 9°45'9"; S. 30°6'7" E. 87°50'4"; S. 29°6'2" E. 89°39'; S. 6°9'3" E. 73°18'9"; N. 13°2'8" E. 46°41'6";

3975

Lampanyctus niger (Günther)

Hammobrachium nigrum Günther, Rep. Voy. Challenger, vol. 22, 1887, p. 199, pl. 52, fig. B. South of Philippines in N. Lat. 4°33' E. Long. 127°6, in 500 fathoms.

Jordan and Jordan, Mem. Carnegie Mus., vol. 10, No. 1, Dec. 1922, p. 13 (reference). —

Taaning, Videnske. Medd. Dansk. Naturh. Foren. Kjöbenhavn, vol. 86, 1928, p. 69 (type).

Myctophum (Lampanyctus?) nigrum Zool. Anzeiger, vol. 28, Nr. 10, Dec. 20, 1906, p. 396 (diagnosis in key); Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 242, text fig. 159 (Gulf of Guinea, ♀ west of Cape Colony, ♀ north of New Amsterdam, ♀ Chagos Archipelago, ♀ Gulf of Aden). — Pappenheim,

N. 1°51' E. 0°31'2"; S. 31°21'1" E. 9°45'9"; S. 30°6'7" E. 87°50'4"; S. 29°6'2" E. 89°39'; S. 6°9'3" E. 73°18'9"; N. 13°2'8" E. 46°41'6";

3 (47) Eulamia sorrah (Müller and Henle)

5 (113) Sphyrna zygaena (Linné)

9 (8) Galeocerdo tigrinus

4°33' E. Eng.

Jordan and

vol. 10, no. 1

Jaaning,

Copen. Kg

Deutsch. Südpolar Exped., vol. 15, Zool. 7, 1914, p. 197 (S. 32°8' W. 8°28', 1000 meters; N. 28°42' W. 34°33'; A south of Azores, 10 meters). — Barnard, Ann. South African Mus., vol. 21, pt. 1, June 1925, p. 239 (off Cape Point).

Lampanyctus niger Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 87 (note). — Fowler, Mem. Bishop Mus., vol. 10, 1928, p. 68 (compiled). — Parr, Proc. U. S. Nat. Mus., vol. 76, 1929, p. 20 (note). — Norman, Discovery Rep., vol. 2, 1930, p. 331 (5.32° 45' W. 8°47'; 650 meters; S. 40°34'30" W. 36°35'30", 152 meters; S. 35°26' E. 1°43'30", 135 meters). — Borodin, Bull. Mus. Comp. Zool., vol. 72, No. 3, Aug. 1931, p. 76 (N. 40°56' W. 39°54', 700 to 800 fathoms; N. 47°40' W. 37°20', 600 fathoms).

Ham

3977

Depth 5 1/2; head 3 2/3, width 2 2/3.
Snout 6 1/2 in head from snout tip; eye 6, greater than snout, 1 2/5? in interorbital; maxillary extends 2 eye diameters behind hind eye edge though not quite to hind well inclined preopercle edge, slender, length 1 1/3 in head from snout tip; interorbital 3 1/2, low. Gill rakers 6+12, lanceolate, slender, little greater than eye.

Scales 35 in lateral line to caudal base, little enlarged; 3? above, 3? below; 14? predorsal. Scales all fallen.

Small antorbital photophore little inferior at front eye edge; 2 opercular, upper on line

19138. Port Langcan, Sumaran [redacted] Island. April 7, 1904. Length 74 mm.

20768. Pujada Bay, Mindanao. May 15, 1908. Length 66 to 68 mm. 2 examples.

14770. Romblon. March 26, 1908. [475, 477.] Length 65 to 79 mm. 3 examples.

8070. Jacol Island, east of Zamboanga. September 15, 1909. Length 68 mm.

22762. Sitanki Reef. September 21, 1909. Length 80 mm.

22763. Sitanki Reef. September 24, 1909. Length 69 mm.

22885. Togian Bay. March 19, 1909. Length 58 mm.

21734. Tulayan Island, Jolo. September 15, 1909. Length 70 mm. 1 example.

Tumindao, Southern lagoon. February 26, 1908. Length 47 mm.

with lower eye edge and upper subpectoral, lower below and little behind hind maxillary end; 3 equidistant veiled branchiostegals; 5 pectorals, first interspace longest, fourth spot well elevated nearly high as upper subpectoral over third ventral; 1 suprapectoral, close below lateral line over and little before upper subpectoral; first or lower subpectoral behind upper though nearer same than either first or second pectoral spots before and close below bases of lowest pectoral fin rays, upper photophore close

before and below pectoral fin origin; 4 ventrals; 1 supraventral close below lateral line opposite ventral fin origin; 6+8 anals, posteroanals behind anal fin base; 3 supraanals, first over third ventral about level with upper subpectoral, second slightly higher or about midway between lateral line and anal fin origin behind fourth ventral, third close below lateral line before first anteroanal; 2 posterolaterals, first or lower little behind and above last anteroanal, upper close below lateral line behind anal fin base and below adipose fin origin; 4 precaudals, first 2

D. III, 29, third spine 3 3/4 in total = head length, third ray 2 1/3; A. III, 18, second spine 6, eighth = ray 2 2/5; caudal 1 1/5, convexly rounded behind; least depth of caudal peduncle 2 1/4; pectoral 1 3/5; ventral 1 4/5.

Back brownish, below paler. 3 + postocular, at upper juncture of preopercle short dusky bar size of pupil. Iris gray. Under surface of head and body pale to whitish. Dorsals, caudal and anal pale gray. Dorsal and anal with numerous, obscure, dark longitudinal lines.

Known only from the type in the Academy, obtained at Bombay, 53 inches long.

low at rudimentary caudal fin rays, third little higher and below fourth at end of lateral line. Supracaudal luminous organs 4, infracaudal 3.

D. III, 10?; first branched ray 1 1/4? in total head; adipose fin 3 2/5; A. III, 14, I; first branched ray 1 3/4?; caudal 1 1/5?, forked; least depth of caudal peduncle 4 1/5?; pectoral ?; ventral 2 1/4? dusky; scale pockets blackish. Head dark, opercles blackish. Iris dark gray. Fins all dark.

3981

74714 U.S.N.M.

Albatross Collection (4958). Length 64? mm. In poor condition.

6 1/6 in head, slightly convex; preopercle edge entire; opercle ends in broad, short, free spine. Gill rakers 5 + 10, lanceolate, 1/2 of gill filaments which 1 2/3 in eye.

Scales 36 in upper section of lateral line, 8 in lower section to caudal base and 2 more on latter; 3 scales above lateral line, 14 below, 17 predorsal forward till midway in interorbital, 5 rows on cheeks to preopercle ridge; muzzle naked; of fins only caudal scaled basally. Scales with 11 basal radiating striae; apical denticles 5-7, with 1 or 2 transverse series of basal elements; circuli fine.

3982

Lampanyctus ater Taaning

Lampanyctus ater Taaning, Vidensk. Medd. Dansk naturh. Foren. København, vol. 86, 1928, p. 68. North Atlantic; diagnosis in key. — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, 1928, p. (88)104, fig. 17 (lat. 32°24' W. 64°29', 10000 feet; lat. 32°19' W. 64°33', 8000 feet); Proc. U. S. Nat. Mus., vol. 76, 1920, p. 20 (note). — Norman, Discovery Rep., vol. 2, 1930, p. 331 (S. 33°25' E. 6°31', 1000 meters; S. 33°50' to 34°13' E. 16°04' to 15°49', 350 to 400 meters; S. 46°56' W. 46°03', 1050 to 1350 fathoms; S. 34°59' E. 16°39', 370 to 450 meters).

3923

Hannobrachium niger (not Günther Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 1, 1903 (1905), p. 591 (Kaiwi Channel, 411 to 460 fathoms).

? Lampanyctus niger Gilbert, Mem. Carnegie Mus., vol. 6, no. 2, 1913, p. 100 (Bungo Channel, 405 fathoms).

Depth 6 1/2; head 4. Snout 5-3/4 in head from snout tip; maxillary reaches well beyond eye, length 1 1/5 in head from snout tip; interorbital evidently depressed, eye entering upper profile of head; hind preopercle edge strongly inclined.

Scales 37 or 38 in lateral line, enlarged.

Five pectoral photophores, first interspace longest, fourth spot elevated level with upper subpectoral and little posterior to third pectoral; 1 suprapectoral, close below lateral line and little posterior to first pectoral or midway between same and subpectorals; 2 subpectorals, one above the other, upper close before bases of lower pectoral rays; 4 ventrals equidistant, at same level; 1 supraventral, close below lateral line opposite ventral fin origin; 6 or 7 + 7 or 8 (1 abnormal), anteroanals equidistant, posteroanals closer and

behind anal fin base; 3 supraanals, first anterior or above interspace of second and third ventral at same level as fourth pectoral and second supraanal, which little behind last ventral or opposite anal fin origin, third close below lateral line but before first anteroanal; 2 posterolaterals, lower above and behind last anteroanal, upper close below lateral line about opposite base of last anal ray; 4 precaudals, arched at lower caudal lobe base, uppermost close below end of lateral line above or slightly before third or penultimate.

Luminous scales only on caudal peduncle, infracaudals extend more than half space between anal and caudal fins.

D. 14 to 16, fin height 2 1/10 in total head length; adipose fin 4; A. 18 or 19, height 2 1/3, fin origin about midway in dorsal length; caudal forked; least depth of caudal peduncle 3; ventral 2 1/10.

Coloration not given. (Parr.)

Atlantic, Antarctic and Pacific Oceans.

3987

Lampanyctus cuprarius Taaning

Lampanyctus cuprarius Taaning, Videnskb. Medd. Dansk naturh. Foren. København, vol. 86, 1928, p. 68. North Atlantic; diagnosis in key. — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, 1928, p. (88)106, fig. 18 (N. 21° to 32° W. 64° to 77°, 4000 to 10000 feet).

Depth 5 3/4; head 3 1/2. Snout 5 1/2 in head from snout tip; eye 5, slightly greater than snout; maxillary extends back well beyond eye though not quite to well inclined hind preopercle edge, slender, length 1 1/3 in head; interorbital evidently

depressed as orbit enters profile.

Scales 33 or 34 in lateral line, enlarged on caudal peduncle.

Pectoral photophores 5, first interspace longest, fourth spot little behind third and elevated level with upper subpectoral; 1 suprapectoral close below lateral line though slightly behind first pectoral; 2 subpectorals, close, one above other, upper close before lower pectoral fin ray bases; 4 ventrals, level, equidistant; 1 supraventral close below lateral line opposite first ventral; 5 to 7 + 4 to 6 - anals, first interspace of anteroanals often long, posteroanals

all behind anal fin base, 3 supraanals, first lowest or about same level as lower subpectoral and little nearer third than fourth ventral, second level with upper subpectoral, opposite anal fin base, uppermost close below lateral line and little behind first anteroanal; 2 posterolaterals, first or lower little above and behind last anteroanal and upper close below lateral line; 4 precaudals, second, third and fourth usually in straight or arched though always oblique line, with fourth in lateral line behind vertical from penultimate precaudal.

3990

D. 16 or 17; A. 17 to 19. Length 62 to 71 mm. without caudal. (Parr.)

Atlantic Ocean.

3791

Lampanyctus lineatus (Taaning

Lampanyctus lineatus Taaning, Vidensk. Medd. Dansk naturh. Foren. Köbenhavn, vol. 86, 1928, p. 68. North Atlantic; diagnosis in key. — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, 1928, p. (88) 108, fig. 19 (N. 21° to 32° W. 64° to 77°, 4000 to 10000 feet).

Depth 6 3/4; head 4. Snout 7 in head from snout tip; eye 6, little greater than snout; maxillary extends 2 1/8 eye diameters behind eye, length 1 1/4 in head from snout tip; interorbital low, eye impinging on upper profile.

Scales 38 to 40 in lateral line,

enlarged on tail.

Pectoral photophores 5, fourth over and posterior to third, nearly level with upper subpectoral; 1 suprapectoral, close below lateral line and close behind first pectoral; 2 subpectorals, one above other, midway in first pectoral interval and upper close before middle of pectoral base; 4 ventrals, rarely 5, level; 1 supraventral, close below lateral line, also close behind first ventral; anals 7 to 9 + 6 to 9, level,

posteroanals behind anal fin base; 3 supraanals, series angulate, first over third ventral interspace level with fourth pectoral, line from second and third through last ventral or little posterior, uppermost close below lateral line, before or above to slightly posterior to first anteroanal; 2 posterolaterals, in oblique line to last anteroanal and upper close below lateral line; 4 precaudals, usually separated from posteroanals, second, third and fourth in straight

or slightly curved oblique series, progressively elevated to fourth at and close below end of lateral line. Supracaudal luminous scales 5, infracaudal 6.

D. 17 or 18; A. 20 to 22, fin origin below middle of dorsal base; least depth of caudal peduncle 3 in total head length; pectoral ?; ventral 2.

Length without caudal 138 mm.

(Parr.)

North Atlantic.

3495

Lepa

Lampanyctus turneri new species

depth 4 4/5 to 5; head 3 1/3 to 3 3/5, width 2 2/5 to 2 3/5. Snout 4 4/5 to 6 in head from snout tip; eye 3 1/2 to 3 4/5, greater than snout, subequal with interorbital; maxillary extends little less than eye diameter behind eye though not quite to oblique hind preopercle edge, slender, length 1 1/2 to 1 3/5 in head from snout tip; interorbital 3 2/3 to 4, slightly convex. Gill rakers 3+10, lanceolate, slender, 1 2/5 in eye; gill filaments 3/5 gill rakers.

Scales 35 in lateral line to caudal base, enlarged and on caudal

D. 5497. Bantigui Island, N. 64° W., 10 miles (9° 7' 15" N., 124° 59' 30" E.), between Leyte and Mindanao, in 960 fathoms. August 3, 1909. Length 26 to 35 mm. 4 examples.

D. 5233. Limasawa Island (S.), S. 70° E., 19.50 miles (10° 00' 22" N., 124° 45' 06" E.), between Bohol and Leyte. May 7, 1908. Length 45 mm.

peduncle more than half its depth;
3 above, 4 below, 12 predorsal
forward to occiput. Caudal base
scaly. Scales with 3 basal
radiating striae; circuli fine.

A small photophore at front eye
edge nearly median; small photophore
eye diameter behind eye; no
distinct photophore on cheek or at
humeral region; 2 opercular, upper
larger and on line from lower eye
edge and pectoral fin origin, lower
veiled behind hind maxillary end;
3 equidistant veiled branchiostegals;
5 pectorals, fourth elevated little

Length 286 mm.

52480 U.S.N.M. Rapid, Yamuna. Bureau of Fisheries. Length 427 mm.

higher than pectoral fin origin,
interspaces to third or fifth much
longest; 1 suprapectoral about
upper 2/5 between lateral line and
pectoral fin origin or but
slightly behind first pectoral
photophore; 2 subpectorals,
first or lower slightly posterior
though little nearer upper than
second pectoral, upper below
pectoral fin origin and opposite
bases of superomedian pectoral
fin rays; 4 ventrals, second
elevated little above lower
subpectoral and also little before
first ventral; 1 supraventral
close below lateral line opposite

5700. Manila market. May 2, 1908.
Length 340 mm.

6305. Manila market. June 17, 1908.
Length 305 mm.

6758, 6759, 6765, 6766, 6767. Manila market. April 21, 1909. Length 245 & 427 mm. nearly clear red, bases of scales colored, marginal portions very silvery. Little trace of brownish limit above lateral line. Top of caudal peduncle dusky. Smaller examples show anal and caudal white and dusky marking behind last dorsal ray and brownish limit on scale rows. Others with caudal base pale, edge blackish, also edge of dorsal and anal and ventrals terminally.

second ventral; 4 or 5 + 8 to 10 anals, anteroanals slightly arched from anal fin base, first 2 or 3 posteroanals above anal fin base; 3 supraanals, first or lowest little higher than second ventral or second supraanal and little behind third ventral, second supraanal behind fourth ventral or close before anal fin origin and third close below lateral line opposite or slightly behind first anteroanal; 2 posterolaterals first or lower little behind and well above last anteroanal,

Pseudochromis spencei Fowler

Pseudochromis spencei Fowler,
Journ. Bombay Nat. Hist. Soc., 1928,
p. 112, pl. 1. Bombay.

Depth 3 4/5; head 3 1/5, width
2 1/4. Snout 4 2/3 in head from snout
tip, little broader than long;
eye 3 3/5 in head, greater than
snout or interorbital; maxillary
reaches slightly beyond front eye
edge, expansion 2 3/4 in eye,
length 3 in head; teeth conic,
simple, uniserial in jaws, 4 canines
in each anteriorly and small
medio-lateral mandibular; no
teeth on palate or tongue, latter
pointed and free in front; interorbital

uppermost close below lateral line little before first posteroanal; 3 or 4 precaudals, first or second contiguous with posteroanals; at lower median caudal rays, second or third little elevated or last at end of lateral line. Supracaudal luminous scales 3, infracaudal 6.

D. II or III, 9, I or 10, I, first branched ray 1 1/4 to 1 1/2? in total head length; adipose fin 3 to 4; A. III, 15, I, first branched ray 1 3/4 to 2; caudal 1 1/4 to 1 1/3?, forked; least depth of caudal peduncle 3 1/3 to 3 2/3; pectoral 1 1/3 to 2;

20846. Tomahawk Island.

December 11, 1909. Length 73 mm.

ventral 2 1/5 to 2 1/4.

Brown. Opercles and belly blackish. Iris with whitish luminous blotches. Fins pale or whitish.

Diagnosis. Apparently differs from all the species known to me in the elevated and advanced second ventral photophore, which at least higher than lower subpectoral and caudal peduncle slender.

Type. No. U. S. N. M.

21977. Murcielagos Bay, Mindanao.
August 9, 1909. Length 68 mm.

22423. Port Lupon, Leyte.
March 17, 1909. Length 75 mm.

20532. Port Galera, Mindoro.
October 27, 1909. Length 63 mm.
1 example. Port Matalvi, Luzon.
November 23, 1908. Length 44 mm.
1 example. Port Palapag.
June 3, 1909. Length 50 mm.

2221 [D. 35197]. Point Tagolo Light, ~~N. 18° E., 11.5 miles~~ (8° S. 71° W., 8.7 miles (8° 47' N., 123° 31' 15" E.).
August 9, 1909. Length 66 mm.

20976. Rapuraput Island.
April 24, 1908. Length 45 mm.

12710 [312]. Reef south lagoon, Tumindao Island. February 28, 1908.
Length 65 mm.

D. 5497. Bantigui Island, N. 64° W., 10 miles (N. 9° 7' 15" E. 124° 59' 30"), between Leyte and Mindanao. In 960 fathoms. August 3, 1909. Length 60 and 61 mm. Type (larger) and paratype.

D. 5185. Susaran Light, N. 23° E., 25.50 miles (N. 10° 5' 45" E. 122° 18' 30"), between Panay and Negros. In 638 fathoms. March 30, 1908. Length 34 to 39 mm. 2 examples.

D. 5125. Hogas Island (W.), S. 11° E., 24 miles (N. 10° 48' E. 121° 48' 30"), Sulu Sea, vicinity southern Panay. In 411 fathoms. February 3, 1908. Length 42 mm.

(To Mr. Percy J. Turner, of Suva, Fiji, to whom I am indebted for interesting fishes from Fiji.)

1 example. Vablayan, Mindoro.
December 12, 1908. Length 50 mm.

14047, 14048. Pacol Island.
September 9, 1909. Length 64 to 69 mm.

22185. Simaluc Sibi Sibi Island,
north of Tawi Tawi. September 23, 1909.
Length 54 mm.

22764 [1995]. Sitanki Reef.
September 24, 1909. Length 60 mm.

2 examples. Surigao, Mindanao.
May 8, 1908. Length 47 to 67 mm.

22351 [1051]. Tagamak Island.
January 7, 1909. Length 75 mm.

21909. Tapiantana Island.
September 13, 1909. Length 75 mm.

8224. Tataan. [redacted] August
20, 1909. Length 53 mm.

Lampanyctus macropterus (Brauer)

Myctophum (Lampanyctus) macropterum Brauer, Zool. Anzeiger, vol. 28, Nr. 10, Dec. 20, 1904, p. (397) 404, fig. 5. Indian Ocean; Deutsch. Tiefsee Exped. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 249, text figs. 166 and 167 (S. 10°8'2" E. 97°14'9", north of Cocos; N. 6°53'1" E. 93°33'5", Bay of Bengal; N. 7°57'9" E. 91°47'2"; N. 7°1'2" E. 85°56'5"; N. 4°56' E. 78°15'3", south of Ceylon; S. 4°5'8" E. 73°24'8", north of Chagos; S. 4°45" E. 48°58'6", between Seychelles and Zanzibar; N. 0°25'7" E. 43°37'8", off north east Africa; N. 9°6'1" E. 53°41'2"; N. 13°2'8" E. 46°41'6", Gulf of Aden). — Pappenheim, Deutsch. Südpolar Exped., vol. 15, Zool. 7, 1914, p. 197 (N. 0°46' W. 18°59', 3800 meters).

Lamprogyrus macropterus Gilbert, Mem. Carnegie Inst., vol. 6, no. 2, Aug. 1913, p. 106 (near Kagoshima). — Regan, Brit. Antarctic "Terra Nova" Exped., Ndt. Hist. Rep., Zool., vol. 1, no. 4, 1916, p. 140, pl. 6, fig. 5 (Spirits Bay near North Cape, New Zealand, 3 meters). — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, artt. 3, Dec. 1928, p. (88)110, text fig. 20 (N. 22° to 23° W. 74° to 77°, 7000 to 8000 feet); vol. 2, art. 4, Oct. 1931, p. 28, fig. 10 (note).

depth 5 to 5 2/3; head 3 1/4 to 3 1/3, width 2 2/3 to 2 4/5. Snout 5 1/8 to 5 3/4 in head from snout tip; eye 4 to 4 1/4, greater than snout, subequal with interorbital; maxillary extends little over eye diameter behind eye though not to well inclined hind preopercle edge, slender, length 1 1/3 to 1 2/5 in head from snout tip; interorbital 4 1/4 to 4 1/3, depressed. Gill rakers 4 + 11, slender, lanceolate, 1 2/5 in eye; gill filaments subequal with gill rakers.

Scales 34 or 35 in lateral line to caudal base, not enlarged; 3 above, 4 below, 13 predorsal. Most all scales fallen.

Small antorbital photophore slightly below middle of front eye edge; humeral photophore about eye diameter behind eye or little before hind maxillary end; 2 opercular, upper little larger and in line with lower eye edge until passing between subpectorals; lower below hind maxillary end; 3 equidistant veiled branchiostegals; 5 pectorals, first interspace longest, fourth spot over and little behind fifth though slightly below level of upper subpectoral; 1 suprapectoral, close below lateral line before subpectorals or midway

in first interspace of pectoral spots;
2 subpectorals, first or lower little
posterior and below upper, midway
between latter and second pectoral;
4 ventrals, equidistant, second little
highest; 1 supraventral at upper
2/5 between first ventral spot and
lateral line; 6 + 7 anals, anteroanals
arched upward slightly, posteroanals
behind anal fin base and not contiguous
with precaudals; 3 supraanals, first
lowest or little behind third ventral,
second little higher and behind
fourth ventral, third close below
lateral line opposite anal fin origin;

2 posterolaterals, first or lower slightly below middle in line with last anteroanal and upper, which close above or below lateral line still posteriorly; 4 precaudals, first 2 low or close together at lower. rudimentary caudal rays, third in line with second and fourth and little nearer second at end of lateral line. Supracaudal luminous scales 4, infracaudal 8.

D. III, 11, I, first branched ray 1 1/4 to 1 3/5 in total head length; adipose fin 4 to 5; A. III, 14, I, first branched ray 2; caudal 1 1/5; least depth of

caudal peduncle 3 1/8 to 3 2/5; ventral 1 4/5 to 1 7/8; pectoral reaches middle in anal length or shorter, 2 1/2 to 2 2/3 in combined head and body to caudal base.

Brown, scale pockets mostly little darker. Iris white. Inside gill opening and mouth dusky to blackish. Fins whitish.

Atlantic, Indian and Pacific Oceans.

4010

D. 5365. Cape Santiago Light, N. 73° W., 6.7 miles (N. 13° 44' 24" E. 120° 45' 30"), Balayan Bay, Luzon. In 214 fathoms. February 22, 1909. Length 90 to 94 mm. 2 examples.

D. 5320. China Sea vicinity of Hong Kong (N. 20° 58' E. 120° 3'). In 1804 fathoms. November 6, 1908. Length 27 to 35 mm. 2 examples.

D. 5280. Malavatuan Island (N.), S. 60° W., 6.1 miles (N. 13° 55' 20" E. 120° 25' 55"), China Sea, vicinity of southern Luzon. In 193 fathoms. July 17, 1908. Length 98 mm.

spine 5, first ray 2 1/10; caudal 1 2/5, slightly emarginate; least depth of caudal peduncle 2 7/8; pectoral 1 3/4; ventral 2 1/5. Blackish gray, fins darker. Length 458 mm. (day.)

India.

Lampanyctus bensoni new species

Lampanyctus bensoni new species

Depth 5 2/3; head 3 2/3, width 2 2/5.

Snout 6 in head from snout tip; eye

4 3/5, greater than snout, 1 1/10 in

interorbital anteriorly; maxillary

reaches 1 3/4 eye diameters behind

hind eye edge though not quite to

well inclined hind preopercle edge,

slender, length 1 1/3 in head from

snout tip; interorbital 4 1/4, slightly

depressed. Gill rakers 6+11, slender,

lanceolate, equals interorbital; gill

filaments 2 1/3 in gill rakers.

Scales 35 in lateral line to

caudal base, enlarged, especially to

on caudal peduncle 10 depth $1\frac{3}{4}$ in least depth of caudal peduncle; 3.? above, 4 below, 11 predorsal forward to occiput. Ventral with pointed axillary scale $3\frac{3}{5}$ in fin. Scales with 3 basal radiating striae; circuli fine. Scales quite caducous, mostly fallen.

At front eye edge small antorbital photophore slightly below middle; humeral photophore about eye diamter behind eye; no distinct photophores on cheek; 2 opercular, upper little larger and on line from lower eye edge passing little below lower subpectoral, lower behind hind maxillary end; 5

pectorals, first interspace longest,
fourth photophore over and little
behind third though not quite elevated
high as upper subpectoral; 1 suprapectoral
rather close below lateral line and
before upper subpectoral; 2 subpectorals,
first or lower entirely behind upper
though little nearer second pectoral
than upper subpectoral, also entirely
below pectoral fin base, upper well
before bases of superomedian pectoral
fin ray bases; 4 ventrals, equidistant;
1 supraventral well above pectoral fin
origin or about upper third in space
between lateral line and pectoral fin

origin; 6+8 anals, anteroanals
arched upward little from anal fin
base, posteroanals all behind anal
fin base and continuous with precaudals;
3 supraanals, first slightly above level
of second, also little ~~above~~ below level of fourth
pectoral over interspace of second and
third ventrals, second about opposite
vent and third on lateral line opposite first
~~anal fin origin~~ anterograd; 2 posterolaterals, first
or lower behind ~~eighth~~ sixth anteroanal, and
to which little nearer than upper
posterolateral on lateral line little
before first posteroanal; 4 precaudals,
first or lowest 2 close together opposite

lower rudimentary caudal rays, third little elevated and posterior though not in line with uppermost at end of lateral line. Infracaudal luminous scales 7, also median row before vent.

D. III, 11, first branched ray 1 1/8 in total head length; adipose fin 4 1/4; A. III, 16, I, first branched ray 1 3/5; caudal damaged, evidently forked; least depth of caudal peduncle 2 3/4; ventral 1 3/5; pectoral reaches middle of anal, length 2 2/5 in combined head and body to caudal base.

Brown, inside mouth and pharynx blackish. Scale pockets and fin bases

often dark or dusky. Fins pale or whitish. Iris grayish with white luminous areas. Operculæ blackish.

Diagnosis. Similar to Lampanyctus macropterus Brauer, but differing in the higher supraventral photophore, the fourth pectoral lower than upper subpectoral, first or lower posterolateral nearer last anteroanal, & posteroanals & pectoral fin reaching middle of anal fin.

Type, No. U. S. N. M. D. 5058.

Length 115 mm.

For Mr. R. Dale Benson Jr. of
Philadelphia, to whom I am indebted
for many collections of American fishes.

4018

Lampanyctus omostigma Gilbert

Lampanyctus omostigma Gilbert, Mem. Mus. Comp. Zool., vol. 26, no. 6, 1908, p. 232, pl. 5. N. Lat. 10°57'35" W. Long. 137°35'25", about 1000 miles north of Marquesas Islands. — Jordan and Jordan, Mem. Carnegie Mus., vol. 10, no. 1, Dec. 1922, p. 12 (reference). — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 88 (reference). — Fowler, Mem. Bishop Mus., vol. 10, 1928, p. 68 (part; not materials). — Parr, Proc. U. S. Nat. Mus., vol. 76, 1929, p. 22 (type); Bull. Bingham Oceanogr. Collection, vol. 2, art. 4, Oct. 1931, pp. 25, 26 (diagnosis in key); Lampanyctus omostigma subsp. paravicauda Parr, Bull. Bingham Oceanogr. Collection, vol. 2, art. 4, Oct. 1931, p. 26, fig. 9. N. 20°48'15" W. 106°11'50", 540 fathoms; N. 16°14' W. 99°36'30", 625 fathoms; N. 11°5' W. 89°20'45", 300 fathoms.

4019

Lampanyctus septilucis Beebe,
Zoologica N. Y. Zool. Soc., vol. 13, No. 4,
March 1934, p. 68, fig. 15. Seven
miles south - southwest of Nonsuch,
Bermuda, 700 fathoms.

Depth 5; head 3'/5, width 3. Snout 7'/3 in head from snout tip; eye 4'/3, greater than snout or interorbital; maxillary extends little over eye diameter beyond eye though not quite to well inclined hind preopercle edge, slender, length 1 2/5 in head from snout tip; interorbital 5?; low. Gill rakers 5+12, 1'/4 in eye; gill filaments 4/5 gill rakers.

Scales 39 in lateral line to caudal base, enlarged; 3 above, 4 below. Scales very caducous, all having fallen.

Minute preorbital photophore between eye and lower part of nostril;

1 suprahumeral, before opercular; 2 opercular, upper row line from lower eye edge to upper subpectoral, large, lower slightly anterior behind hind maxillary end; 3 equidistant veiled branchiostegals; 5 pectorals, first interspace longest, fourth elevated above lower subpectoral though not quite so high as upper little posterior to third pectoral; 1 supraoccipital little posterior to subpectorals about midway between lateral line and pectoral fin origin; 2 subpectorals, one over other, upper little before and below pectoral fin origin and lower just below pectoral fin base though before second

14979. Calangaman Island.
March 16, 1909. Length 230 mm.

12945, 12946, 17406 to 17409.
Candaraman Island. January 4, 1909.
Length 119 to 165 mm.

10974, 11186, 11187, 17070, Camahala Bay, Luzon. March 11, 1909.
Length 153 to 186 mm.

~~7636, 7637, 11699.~~ 21055. Capunungpugan Point, Generala Island.
May 9, 1908. Length 205 mm.

7636, 7637, 11699. Capunungpugan Point. May 10, 1908. Length 170 to 195 mm.

7626, 7627. Cataingan Bay, Masbate.
April 17, 1908. Length 156 to 167 mm.

16862. Cataingan Bay. April 18, 1908.
Length 135 mm.

5516. Catbalogan, Samar. April 15, 1908.
Length 252 mm.

pectoral; 4 ventrals, second slightly anterior and over first at same level as lower subpectoral, third midway between second and fourth; 6 + 8 or 9 anals, first and fifth anteroanals closer to anal fin base at same distance, second well diverging, third and fourth intermediate between second and fifth, all posteroanals except first 2 behind anal fin base; 4 precaudals, first low and continuous with last posteroanals, third midway between second and fourth which last at end of lateral line. Supracaudal luminous organs 4, infracaudals ?.

D. III, 11, I, first branched ray 1 3/5.? in total head length; adipose

4964, 4965, 11115, 12994, 17750. Alibijaban Island, Raigay Gulf, Luzon. March 6, 1909. Length 180 to 221 mm.

14887, 14888, 17765. Alimango Bay, Burias Island. March 5, 1909. Length 185 to 204 mm.

17759. Balibaian Bay. August 17, 1908. Length 226 mm.

9304, 9305. Biri Channel. June 1, 1909. Length 203 to 205 mm.

9491, 15873. Bolalo Bay, Palawan. December 21, 1908. Length 207 to 214 mm.

8867. Buang Bay, Talajit Island. March 15, 1909. Length 176 mm.

12452. Bugsuk Island. January 5, 1909. Length 127 mm.

8065, 8365, 9007. Busin Harbor, Burias Island. April 22, 1908. Length 188 to 199 mm.

fin 4 1/10; A. III, 15, I, first branched ray 2; caudal 1 1/4, forked; least depth of caudal peduncle 3; pectoral 1 1/4; ventral 2 1/6.

Dark brown, blackish on opercles and at bases of fins. Vertical fins with fine wavy lines due to dark pigment at along line of articulation of rays.

Pacific Ocean.

75769 U.S.N.M. N. 10° 57' 35" W. 137° 35' 25" (1000 miles north of Marquesas Islands). Length 62 mm. Type.

Edges of caudal lobe brick red, center yellowish, very pale. Anals and ventrals almost colorless, with slight wash of straw yellowish. Pectorals pale pink, lips and roof of mouth posteriorly pinkish.

55909 U.S.N.M. Bulan, Sorsogon. Bureau of Fisheries (3845). Length 108 mm. Type of Vcolopsis bulanensis.

4024

Lampanyctus punctatissimus Gilbert

Lampanyctus punctatissimus Gilbert, Mem. Carnegie Mus., vol. 6, no. 2, Aug. 1913, p. 103. Suruga Bay, Japan, in 300 fathoms. — Parr, Bull. Bingham Oceanog. Collection, vol. 3, art. 3, Dec. 1928, p. 88 (reference); Proc. U.S. Nat. Mus., vol. 76, 1929, p. 23, fig. 10 (type).

Depth 4 1/4 to 5 1/5; head 3, width 2 3/4 to 3 1/4. Snout 5 to 6 in head from snout tip; eye 4 1/4 to 6, greater than snout or interorbital; maxillary extends 1 3/4 eye diameters behind hind eye edge but not quite to well inclined hind preopercle

edge, slender, length 1 1/3 to 1 1/2 in head from snout tip; interorbital 3 to 3 3/4, low convex.

Scales 34 in lateral line. Scales very caducous, all having fallen.

Small developed photophore on middle of cheek; suprahumeral smaller, before hind maxillary end; 2 opercles, upper larger and on line with lower eye edge and lower subpectoral, lower close behind hind end of maxillary; 3 equidistant veiled branchiostegals; 5 pectorals, first interspace longest, fourth spot behind third pectoral and elevated above lower subpectoral but not quite high as upper

1187

A 413, A 414. Jolo market.
March 7, 1908. Length 180 to 210 mm.
Back olivaceous. Narrow blue
stripe along dorsal bases. Silvery
yellow blotch just above middle
of side under dorsal posterior.
Lateral line slightly dusky,
under its origin pedrl blue blotch,
placed along incline of scales,
bordered on either edge of an
interrupted sepia line; between
latter and silvery blotch 5 or 6
oblique lines made up of about
4 round dots in each. Lower
head and body merging into a
dusky white tint. Snout above
darker than rest of head.
Preorbital below with bluish stripe
in front of spines. Dusky blotch
at top of opercle. Dorsal very
pale, slightly pinkish posteriorly.

subpectoral; / supraventral about upper third between lateral line and pectoral fin origin little before upper subpectoral; 2 subpectorals, first or lower below and little posterior, before and close below bases of lowest pectoral fin rays, upper close before bases of uppermost pectoral fin rays; 4 ventrals, equidistant, about same level; / supraventral close below lateral line, little before first ventral; 7 + 6 anals, last anteroanals slightly elevated, posteroanals behind anal fin base; 3 supraanals, first level with pectoral fin origin over interspace between

57597 U.S.N.M. Japan. P.L.
Jouy. Length 180 to 215 mm.
2 examples.

59748 U.S.N.M. Kagoshima.
Dr. H.M. Smith. Length 99 to 118 mm.
2 examples.

71525 U.S.N.M. Kagoshima.
Bureau of Fisheries. Length 136 to
153 mm. 2 examples.

second and fourth ventrals,
second little lower than first
and behind fourth ventral,
third close below lateral line.
below adipose fin; 4 precaudals,
2 continuous with posteroanals,
third most posterior and little
elevated, fourth close below
end of lateral line. In addition
head and body with many small
thick-set luminous dots.
surrounded with black pigment
rings showing more or less
definite arrangement; well
defined series of about 15 equally
spaced along outer surface of
mandible and similar series
on maxillary; on sides of head

depth 2 7/8 to 3 1/8; head 3 to 3 1/4, width 1 2/3 to 2. Snout 2 9/10 to 3 in head; eye 3, 1 to 1 1/10 in snout, 1 to 1 1/10 in interorbital; maxillary reaches nearly opposite front eye edge, expansion 3 to 3 1/3 in eye, length 3 1/5 to 3 1/2 in head, teeth in villiform bands in jaws; interorbital 2 7/8 to 3 1/5 in head, very slightly convex with median depression; hind preopercle edge rather coarsely denticulate; infraorbital spine about 1/3 of eye. Gill rakers 5+5, short, round, low tubercles.

Scales 41 in lateral line to caudal base and 3 more on latter; 4 scales above lateral line, 9 below, 25 to 27 predorsal forward opposite hind nostril, 5 or 6 rows on cheek to preopercle

and body 1 to each scale arranged under tip of exposed portion; few extend out on caudal fin base. Supracaudal luminous scales 2, one before adipose fin.

D. III, 9, I, first branched ray 1 1/2 in total head length; adipose fin 3 1/8 to 3 4/5; A. III, 14, I, first branched ray 2 1/2?; caudal subequal with head, forked; least depth of caudal peduncle 3 1/8 to 3 1/4; pectoral 1 1/3 to 2 1/3; ventral 2 to 2 1/3.

Blackish brown. Fins whitish. Iris dark.

Pacific Ocean.

10 to 12 basal radiating striae; apical denticles 88 to 132, small slender points, with 11 to 15 transverse series of basal elements; circuli very fine.

D. X, 9, I, fourth spine 2 1/3 to 2 1/2 in total length, head length, fourth ray 1 7/8; A. III, 7 or 8, third spine 2 7/8 to 6; caudal 1 1/8 to 1 1/5, hind edge concave; least depth of caudal peduncle 2 7/8 to 3; pectoral 1 1/5 to 1 1/4; ventral 1 1/4 to 1 2/5.

Brown, with 5 or 6 ill defined vertical bands on back. Fins uniform pale brown.

Arabia, East Indies, Japan.

4029

74469 U. S. N. M.

Albatross Collection (5064). Length 25 mm. Type.

74515 U. S. N. M.

(?)

Albatross Collection (5064). Length 21 mm.

74516 U. S. N. M.

Albatross Collection (5058). Length 20 to 27 mm. 4 examples.

Depth 2 2/5 to 2 2/3; head 3 to 3 1/8, width 1 7/8 to 2 1/5. Snout 3 1/3 to 3 2/5 in head from upper jaw tip; eye 3 1/8 to 3 1/4, greater than snout to subequal, greater than interorbital; maxillary reaches 1/5 to 1/4 in eye, expansion 1/2 of eye, length 2 3/5 to 2 3/4 in head from upper jaw tip; teeth villiform, outer row little enlarged; interorbital 3 1/5 to 3 3/4, little convex; infraorbital edge with 4 or 5 posterior denticles of which upper largest; preopercle edge finely denticulate. Gill rakers 6+5, short tubercles.

Scales 35 or 36 in lateral line to caudal base and 0 to 2 more on latter; 5 scales above lateral line, 11 below, 13 predorsal to occiput and 5 rows on cheek to preopercle ridge. Scales with

2878 4030

Lampanyctus jordani Gilbert

Lampanyctus jordani Gilbert, Mem. Carnegie Mus., vol. 6, no. 2, Aug. 1913, p. 104, pl. 14. N. Lat. 42° 11' E. Long. 141° 57'; 269 to 326 fathoms. Hemuro, Hokkaido, Japan; — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 89 (reference).

Depth 4 7/8; head 3 7/15, width 2 3/5. Snout 6 1/2 in head from snout tip; eye 4 7/5, 1 1/4 in interorbital greater than snout, 1; maxillary extends 1 1/4 eye diameter behind eye, not quite to well inclined hind preopercle edge, slender, length 1 2/5 in head from snout tip; interorbital 3 3/5, 1, low, slightly convex. Gill rakers 6 + 15, lanceolate, slender,

1 1/8 in eye; gill filaments 2/3 gill rakers.

Scales 36 in lateral line, enlarged; 3 above, 4 below, 14 predorsal to occiput. Scales with 2 or 3 basal radiating striae; circuli fine, complete.

Minute preorbital photophore at middle of front eye edge; 1 on cheek in contact with upper maxillary border eye - diameter posterior to eye; distinct small photophore on shoulder slightly behind vertical of third branchiostegal; 2 opercular, upper larger and in line with lower eye edge and upper subpectoral, lower

little below and behind hind maxillary end; 5 pectorals, first interspace longest of spots at same level though interspace of third and fourth subequal, fourth elevated level with upper subpectoral over and slightly posterior to third; 1 suprapectoral about upper fourth in space between lateral line and pectoral fin origin though little before upper subpectoral, also very small photophore (not seen in any other species) close above pectoral origin; 2 subpectorals, first or lower slightly posterior though before second pectoral,

upper little before pectoral fin origin and about opposite middle of fin base; 4 ventrals, second little elevated though not quite high as first or lower subpectoral and remaining form equidistant at same level; 1 supraventral, close below lateral line and slightly behind ventral fin origin; 8 + 8 anals, second and third anteroanals elevated, level with first and second supraanals and eighth also well elevated though little nearer penultimate anteroanal than posterolateral, all but first posterolaterals behind anal fin base; 3 supraanals, first and second on same level

15608, 16200. Jagamala Island. January 7, 1907. Length 206 to 207 mm.

9517. Jara Island. December 15, 1908. Length 146 mm.

5828. Tatabada Point. May 15, 1908. Length 208 mm.

6594. Tulnalutan Island. September 9, 1909. Length 214 mm.

13385, 16084 to 16086. Ulugan Bay, Channel north of Oyster Inlet, Palawan. December 28, 1908. Length 131 to 206 mm.

5361. Bumbum Island, Borneo. September 25, 1909. Length 188 mm.

13462. Linbe Strait, Celebes. November 9, 1909. Length 170 mm.

as fourth pectoral and second and third anteroanals, first over and little before second ventral and second little before fourth ventral, third close below lateral line opposite vent; 1 posterolateral close below lateral line and slightly before adipose fin origin; 4 precaudals lower 3 in arc at base of lower caudal lobe, below, fourth more widely separated at end or base of lateral line. Numerous minute luminous spots or dots on sides of head and body, 1 to each scale of trunk, at tip of exposed portion. Supracaudal luminous

scales 2, infracaudal 9, 2 or 3 with occasional traces of 1 or 2 more before adipose fin.

D. III, 10, I, first branched ray 1 1/3 in total head length; adipose fin 3 1/5; A. III, 16, I, first branched ray 1 2/5; caudal 1 1/5, forked; least depth of caudal peduncle 2 2/5; pectoral 1 1/8; ventral 1 2/3.

Dark brown or dusky. Opercle and inside gill opening blackish. Iris gray. Fins brownish.

Pacific Ocean. The type 121 mm. long in the Carnegie Museum.

745 17 U.S.N.M. N. 42° 11' E. 141° 57'. In 269 to 326 fathoms. Albatross Collection (5039). Length 153 mm. Paratype.

8214, 15656, 15661. Pagapas Bay, Luzon.
February 20, 1909. Length, 200 to 201 mm.

12519 to 12521. Polloc, Mindanao.
May 22, 1908. Length 175 to 200 mm.

8981. Poronapong Island.
June 10, 1909. Length 195 mm.

11749, 20678. Port Banalacan, Marinduque. February 23, 1909.
Length 185 to 188 mm.

6947, 13102. Port Galera.
June 9, 1908. Length 189 to 209 mm.

9178, 11057. Port Daniel, Luzon.
July 13, 1908. Length 202 to 203 mm.

11028. Port Maricaban, Luzon.
July 21, 1908. Length 220 mm.

15479, 17175. Port Matalvi, Luzon.
November 23, 1908. Length 191 to 193 mm.

4036

Lampanyctus stilbius Gilbert

Lampanyctus stilbius Gilbert, Mem. Mus. Comp. Zool., vol. 26, no. 6, 1908, p. 235, pl. 8. Near Nukuhiva, Marquesas Group, to 300 fathoms. — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 89 (reference). — Fowler, Mem. Bishop Mus., vol. 10, 1928, p. 69 (compiled). — Parr, Proc. U. S. Nat. Mus., vol. 76, 1929, p. 23 (type).

Depth 5 1/8; head 3, width 2 3/5. Snout 8 in head; eye 3 2/5, greater than snout or interorbital; maxillary extends 3/4 eye diameter behind eye though not quite to moderate inclined

hind preopercle edge, slender, length 1 1/2 in head from snout tip; interorbital 5, convex.

Scales about 38 in lateral line to caudal base, enlarged; 3 above, 4 base. Caudal base scaly. Scales very caduceous, all fallen.

Small antorbital photophore at lower front eye edge; 3 small spots on upper postocular close behind eye and fourth lower or little below level of pupil; small humeral photophore, high, little behind third branchiostegal; 2 opercular, upper larger and in line from lower eye edge to fourth pectoral spot, lower close behind

7229. Masinloc Bay, Zambales. November 22, 1908. Length 447 mm.

7938. Pagapas Bay. February 20, 1909. Length 263 mm.

7758, 7759. Port Ciego, North Balabac Strait. January 3, 1909. Length 247 to 488 mm.

6329. Port Jamelo. July 13, 1908. Length 415 mm.

6570. Port Maricaban. July 21, 1908. Length 488 mm.

hind maxillary end; 3 equidistant branchiostegals; 5 pectorals, first interspace longest or even greater than space between second and fifth pectorals, fourth photophore higher than lower subpectoral though lower than upper and between third and fifth pectorals; 1 suprapectoral on lateral line close before upper subpectoral; 2 subpectorals, first or lower close below pectoral fin base and slightly posterior to upper, which below pectoral fin origin close before bases of superomedian pectoral fin rays; 4 ventrals, second elevated though not quite level with upper subpectoral,

11126. Pasacao, Ragay Gulf, Luzon.
March 9, 1909. Length 155 mm.

12518. Polloc, Mindanao.
May 22, 1908. Length 164 mm.

12050, 12051. Port Banalacan.
February 23, 1909. Length 148 to 154 mm.

10484, 10724. Port Maricaban.
July 21, 1908. Length 154 to 168 mm.

14764. Romblon. March 26, 1908.
Length 119 mm.

16882. Tablayan, Mindoro.
December 12, 1908. Length 167 mm.

15706 [289]. Sanguisiapo Island,
Sulu. February 24, 1908. Length 156 mm.

over and little posterior to first;
/ supraventral on lateral line
opposite ventral fin base; 7+4
anals, anteroanals in slight
sigmoid curve, posteroanals
behind anal fin base and well
separated from precaudals; 3
supraanals, first or lowest little
higher than second ventral, over
fourth ventral, second little
nearer first than third also
posterior to first, third close
above lateral line over and
slightly behind second; /
posterolateral close above lateral
line over and slightly behind
last anteroanal; 3 or 4 precaudals,
2 lower close, nearly rudimentary

8087, 1083.
1 9268. Alimango Bay, Burias Island.
March 5, 1909. Length 226 to 417 mm.

8032. Capulaan Bay, Pagbilao.
February 24, 1909. Length 249 mm.

A475. Isabela, Basilan Island. September
11, 1909. Length 225 mm.

4800. Jolo market. February 8, 1908.
Length 300 mm.

7914. Limbones Cove, Luzon. February 8, 1909.
Length 343 mm.

lower caudal rays, upper close above end of lateral line, sometimes third intermediate may be present. Supracaudal luminous scales 4, infracaudal 4. Luminous scales likely present at front dorsal and anal fin ray bases, also ventral fin bases. Minute scattered photophores on head and body.

D. III, 8, I, fin height 2? in total head length; adipose fin 4 3/5; A. III, 10, I, fin height 2 1/4; caudal 1 1/4, forked; least depth of caudal peduncle 3 7/8; pectoral 1 4/5?; ventral 2.

Brownish. Iris grayish.

Fins ~~#~~ whitish.

18375. Maricaban Island.

January 20, 1908. Length 159 mm.

9306, 17637. Mompog Island.

March 3, 1909. Length 144 to 165 mm.

15256, 6183. Near Palag Bay, Luzon. June 16, 1909. Length 107 to 161 mm.

12503. North west Verde Island.

July 22, 1908. Length 160 mm.

12465, 15350. Pagapas Bay. February 20, 1909. Length 143 to 189 mm.

7027. Panabutan Bay, Mindanao.

February 6, 1908. Length 168 mm.

21844. Pandanon Island.

March 23, 1909. Length 150 mm.

15920. Pangasinan Island, Jolo.

February 13, 1908. Length 121 mm.

Pacific Ocean. The type now in very poor preservation and the photophores all gone. My account is largely from Gilbert's description and figure.

75768 U.S.N.M.

near Nukuhiva, Marquesas Islands.

Albatross Collection (3798). Length 20mm.

Type.

1272

yello
broade
from co
by na
marr
dorsal
short br
quite meeting
backward to be
under
ior of dor
surface w
brown bl
of br
whitis
edges
thirds
between
pinkish. Pe

two

Posterior

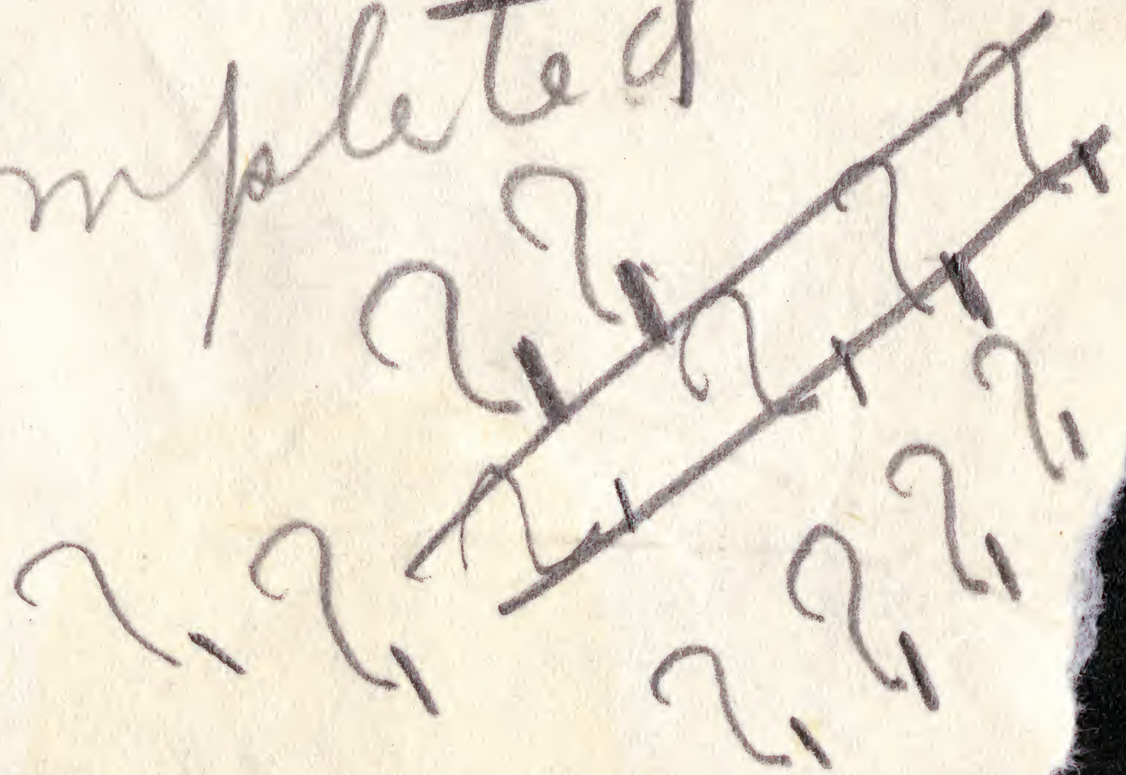
low;

mi axil, darks of brown stripe blotching upper edge of base. Iris dusky and yellow.

20022. Curaçao Island. Mar 8, 1908. Length 111 mm.

9376. Jaquanaka Island. January 7, 1909. Length 132 mm.

completed



4042

Lampanyctus pusillus (Johnson)

Scopelus pusillus Johnson, Proc. Zool. Soc. London, 1890, p. 457. Madeira.

Lampanyctus pusillus Taaning, Vidensk. Medd. Dansk naturh. Foren. Köbenhavn, vol. 86, 1928, p. 66 (North Atlantic; diagnosis in key). — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, 1928, p. (89) 112 (N. 32°24' W. 64°29', 5000 feet); Prov. U. S. Nat. Mus., vol. 76, 1929, p. 25 (note). — Norman, Discovery Rep., vol. 2, 1930, p. 330 (S. 33° 07' 40" E. 4° 30' 20", 2000 meters; S. 33° 25' E. 6° 31', 1000 meters; S. 34° 5' 15" E. 16° 00' 45", 1000 meters; S. 33° 20' to 33° 46° E. 15° 18' to 15° 08', 2000 to 2500 meters; S. 35° 01' E. 10° 18', 250 meters).

4043

Lampanyctus alatus (not Goode and Bean) Jaaning, Rep. Danish Oceanogr. Exped., No. 5, vol. 2, A. 7, 1918, p. 108, figs. 42 to 43 (Mediterranean; Atlantic);

Depth 5; head 3 2/5. Snout 7 1/4 in head; eye 5, greater than snout; maxillary extends 2 eye diameters behind eye, slender, length 1 1/4 in head; interorbital low.

Small antorbital photophore little inferior on front eye edge; cheek with single median photophore; 2 opercularis, upper little larger

origin and third close below lateral line opposite first anteroanal; 2 posterolaterals in inclined line with last anteroanal, first midway in series and uppermost close below lateral line; 2 precaudals, upper little advanced and little below lateral line. Supracaudal luminous scales 3 or 4, infracaudal 3 to 6.

D. III, 10, first branched ray 1 1/3 in total head length; adipose fin 2 3/4; A. III, 16, first branched ray 1 3/4; caudal 1, forked; least depth of caudal peduncle 2 1/4; ventral 1 3/4;

and about level with lower subpectoral;
3 branchiostegals; 5 pectorals, first
interspace longest, fourth spot
elevated level with lower subpectoral,
and little behind third spot; 1
suprapectoral, nearly forming inclined
line with subpectorals and second
pectoral, close below lateral line; 2
subpectorals close, before pectoral fin
base; 4 ventrals, level; 1 supraventral,
not quite high as level of upper
subpectoral or at lower 2/5 between lateral
line and ventral fin base; anals 4 to
6 + 7 to 9, first anteroanal lower than
following, posteroanals behind anal

Lampanyctus pseudoalatus Taaning,
Videnskb. Medd. Dansk naturh.
Foren. København, vol. 86, 1928, p. 66.
Atlantic; diagnosis in key. — Parr,
Bull. Bingham Oceanogr. Collection,
vol. 3, art. 3, 1928, p. 90 (note).

anal fin base; 3 supraanals, in broadly triangular series, first and second in slightly inclined series with 2 supraventral, first spot over second ventral interval, second spot behind fourth ventral spot and third little below lateral line nearly over first anteroanal; 2 posterolaterals, in line passing little behind last anteroanal, first little nearer last anteroanal than second which little below lateral line; 2 precaudals, upper slightly advanced

? Myctophum (Lampanyctus) alatum (not Goode and Bean) Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 244, text figs. 161-162 (part; N. 24°43'4" W. 17°1'3", south of Canaries; N. 8°58' W. 16°27'9", off Sierra Leone; N. 5°5'3" W. 13°27'5"; N. 2°36'5" E. 3°27'5", Gulf of Guinea; S. 36°23'4' E. 17°38'1", south of Cape Colony; S. 37°31'2" E. 17°1'6"; S. 30°6' 7" E. 87°50'4", north of New Amsterdam; S. 10° 8'2" E. 97°14'9", north of Cocos Island; S. 6°19'3" E. 73°18'9", Chagos; S. 2°38'7" E. 65°59' 2", between Chagos and Seychelles; S. 2°43'8" E. 61° 12'6"; S. 4°34'8" E. 53°42'8", between Seychelles and Zanzibar). — Barnard, Ann. South African Mus., vol. 21,

and little below lateral line, first little above last posteroanal.

D. II, 11, I, second branched ray 1⅓ in head; adipose fin 4; D. II, 12, I, inserted below hind basal end of dorsal second branched ray 1 3/4; caudal 1⅛, forked; least depth of caudal peduncle 2 2/3; ventral 1 3/4; pectoral 2½ in total length without caudal.

Length 40 mm. (Jaaning.

Mediterranean and Atlantic.

pectoral 2 1/10 in combined head and body to caudal base.

Length 93 mm. (Brauer.)

Atlantic and Indian Oceans.

4047

Lampanyctus rittori Gilbert

Lampanyctus rittori Gilbert, Proc. U. S. Nat. Mus., vol. 48, 1915, p. 318, pl. 15, fig. 3. Off San Clemente Island; Monterey Bay, California; 350 to 599 fathoms. — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, 1928, p. 89 (diagnosis in key); Proc. U. S. Nat. Mus., vol. 76, 1929, p. 23, fig. 11 (type).

Depth 5 1/5; head 3 3/4, width 2 2/5. Snout 7 3/4 in head from snout tip; eye 4 4/5, greater than snout, 1 1/8 in interorbital; maxillary extends 1 1/2 eye diameters behind eye or not quite to hind inclined

preopercle edge, slender, length
1 2/5 in head; interorbital 4, low.
Gill rakers 5 + 11, slender,
lanceolate, 1 1/3 in eye; gill
filaments 4/5 gill rakers.

Scales 38 in lateral line to
caudal base, enlarged; 4 above,
3 below, 12 predorsal to occiput.
Scales very caducous, most all
lost.

Antorbital luminous spot
small, below axis of eye, less
evident with age; 1 photophore
near hind angle of cheek above
hind part of maxillary; small
humeral photophore at upper
end of opercular cleft; 2 operculars,
upper larger and slightly below

pale or whitish medial lateral band on costal region horizontally. Upper hind edge of gill cover and humeral scale dusky brown. Chin whitish. Inside pharynx orange red. Vertical fins brown, lower fins whitish. Pectoral dusky spot, greatly less than pupil at upper pectoral base.

Arabia, Zanzibar, Penang, India, Ceylon, East Indies, Tonkin, Cochin, Philippines, China, Formosa, Japan. The nominal Scolopsides torquatus Cuvier seems to differ only in coloration, lacking the pale gray or whitish horizontal band on the costal region. This, however, is not often evident in preserved examples.

line from lower eye edge to upper subpectoral, lower behind hind maxillary end; 3 equidistant branchiostegals; 5 pectorals, first interspace longest, fourth spot over and slightly posterior to third at level with pectoral fin origin; 1 suprapectoral close below lateral line over and little before upper subpectoral; 2 subpectorals; first or lower rather close below upper, which close before and slightly below pectoral fin origin; 4 ventrals, second pair most widely separated; 1 supraventral little below middle in space between lateral line

26 predorsal forward little before front nostril, 6 rows on cheek to preopercle ridge. Scales with 9 basal radiating striae; apical denticles 81 to 103, with 5 to 7 transverse series of basal elements; circuli fine.

D. X, 9, I, fourth spine 2 to 2 1/5 in head, first ray 2 1/3 to 2 2/5; A. III, 7, I, second spine 2 to 2 1/4, first ray 2 1/5 to 2 1/3; caudal 1 1/6 to 1 1/5, emarginate, upper lobe little longer; least depth of caudal peduncle 2 3/5; pectoral 1 1/4; ventral 1 1/4 to 1 1/3.

Brown above, sides and lower surface pale. Whitish transverse band sometimes from side of occiput down over opercle and most of space before pectoral base. Iris whitish. Sometimes

4050

and ventral fin base, 8+11
anals, first 7 anteroanals weakly
arched upward and eighth
abruptly elevated in line
joining seventh with posterolateral
though constantly little nearer
seventh, posterolaterals behind
anal fin base and contiguous
with precaudals; 3 supraanals,
first and second at same level
as fourth pectoral, first
slightly over or before third
ventral, second above first
anal ray base, third close below
lateral line over and little
before second anteroanal; 1
posterolateral close below lateral
line about opposite base of

The following are all like Bleeker's figure of the young:

17635 [1196]. Mompog Island. March 3, 1909. Length 72 mm.

15949, 22199. Pangasinan Island, Jolo. February 13, 1908. Length 55 to 86 mm.

15732. Nanguisiapo Island. February 24, 1908. Length 70 mm.

18784. Tictauan Island, east of Zamboanga. September 8, 1909. Length 86 mm.

6170. Tonquil Island. September 14, 1909. Length 104 mm.

20872. Usada Island, Jolo. March 3, 1908. Length 93 mm.

second anal ray; 4 precaudals, last abruptly elevated close below lateral line near its end, penultimate slightly elevated vertically last (abnormally 4 small photophores crowded above base of lower caudal lobe). Four luminous supracaudal scales, 8 infracaudals.

D. III, 10, I, first branched ray 1 1/3 in total head length; adipose fin 4 1/5; A. III, 15, I, first branched ray 1 1/2; caudal 1 1/8, well forked; least depth of caudal peduncle 2 1/4; pectoral 2 2/3; ventral 2.

Brown, scale pockets dusky. Inside mouth and gill cavity blackish. Iris dark gray. Fins

4899. Jalajit Island, Buano Bay. March 15, 1909. Length 168 mm.

6510. Yara Island. December 14, 1908. Length 140 mm.

13461. Limbe Strait, Celebes, Dutch East Indies. November 9, 1909. Length 177 mm.

22197, 22198. Gomano Island. December 3, 1909. Length 110 to 115 mm.

14738. Kayoa Island. November 29, 1908. Length 118 mm.

30605 U. S. N. M. New Guinea. Australian Museum. Length 168 to 170 mm. 2 examples.

56735 U. S. N. M. Bulan. Bureau of Fisheries (3875). Length 143 mm.

72010 U. S. N. M. Naha, Okinawa, Riu Kiu. Albatross Collection 1906. Length 168 mm.

pale to whitish, bases mostly
dusky or dark.

Pacific Ocean.

75807 U.S.N.M.

Monterey Bay, California. In 389 to
456 fathoms. Albatross Station (4513).
Length 142 mm. Type.

1086

A 1237. Gomomo Island. December 3, 1909.
Length 350 mm.

13555. Tanabebe Island, Flores Sea.
December 21, 1909. Length 177 mm.

A 1335. Tomahu Island. December 11, 1909.
Length 218 mm.

4052

Lampanyctus regalis (Gilbert)

Myctophum regale Gilbert, Proc. U. S. Nat. Mus., vol. 14, 1891, p. 544. Albatross Stations 2923, 2980, 3070, Santa Barbara Channel, 603 to 822 fathoms.

Hannobrachium regale Jordan and Evermann, Bull. U. S. Nat. Mus., no. 47, pt. 1, 1896, p. 563 (compiled). — Townsend and Nichols, Bull. Amer. Mus. Nat. Hist., vol. 52, art. 1, May 16, 1925, p. 10 (southwest of Santa Barbara Island, 451 fathoms; N. 33° to 34°, 534 fathoms).

Myctophum (Lampanyctus) regale Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 5, Tiefsee-Fische, 1906, p. 167 (diagnosis in key).

4053

Lampanyctus regalis Gilbert, Proc. U. S. Nat. Mus., vol. 48, 1915, p. 316 (off San Diego, Catalina Island, Santa Barbara Island, Monterey, California, 161 to 891 fathoms). — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, 1928, p. 89 (diagnosis in key); Proc. U. S. Nat. Mus., vol. 76, 1929, p. 24, fig. 11 (type).

Depth 4 4/5 to 5; head 3 2/5, width 2 1/2. Snout 5 to 7 in head from snout tip; eye 4 to 5 7/8, greater than snout, greater than interorbital in young to 1 1/4 with age; maxillary extends 1 1/4 to 2 1/4 eye diameters behind

eye though not quite to well inclined hind preopercle edge, slender, length 1 1/3 to 1 1/2 in head; interorbital 3 to 3 1/4, low, depressed. Gill rakers 5+12, of which slender, lanceolate, 1 1/5 in eye, subequal with gill filaments.

Scales 40 in lateral line to caudal base, enlarged or much deeper than others, 3 above, 3 below. Caudal base scaly. Scales very caducous, mostly all fallen.

Small antorbital photophore at lower front eye edge, cheeks, suborbital region, snout and

Mauritius, Madagascar, East Indies, Philippines, Melanesia, Micronesia, Polynesia. Besides the materials below I have also examined 18 examples from Oceania. There is little doubt but that Caesio cylindricus is a synonym. Savoage gives D. XIII, 17 in his description though his plate shows XVII, 18?

vertex with extremely minute numerous luminous organs, in oblique definite wavy lines on cheek; somewhat larger luminous body on lower hind part of cheeks; 2 opercular photophores, upper larger and on line from lower eye edge passing between subpectorals, lower below and behind hind maxillary end; 3 veiled branchiostegals, median nearer posterior; 5 pectorals, first interspace longest and second shortest, fourth spot elevated till level with upper subpectoral; 1 suprapectoral close below lateral line over and slightly forward of subpectorals;

& 7 transverse series of basal elements; circuli fine.

D. X or XI, 21, or 22, I, third spine 2 to 2 7/8 in total head length, first ray 2 7/8 to 3 3/5; A. III, 12, I or 13, I, second spine = 2 3/5 to 3, first ray 3 1/8 to 3 2/5; caudal 1 1/8 to 1 1/4, well forked; ~~pectoral~~ least depth of caudal peduncle 2 7/8 to 3 1/2; pectoral 1 1/8 to 1 1/2; ventral 1 1/2 to 2.

Olive brown above with bluish tint and obsolete gray band from behind eye to caudal base. Above 3 or 4 dark longitudinal lines follow scale courses, not sharply defined. Under surface of body white. Iris whitish. Fins pale, dark longitudinal band on each caudal lobe and dark spot at pectoral origin and axil.

2 subpectorals, lower below and little behind upper, rather close, upper close before pectoral fin origin; 5 ventrals, equidistant, level; 1 supraventral, at upper third in space between lateral line and ventral fin origin; 6 to 8 + 7 or 8, posteroanals behind anal fin base and contiguous with lower precaudals; 3 supraanals, first over or behind third ventral and slightly lower than level with second supraanal which about level with upper subpectoral and fourth pectoral though little behind fifth ventral, uppermost supraanal close

depth 3 7/8 to 4 1/2; head 3 1/2 to 3 3/4, width 1 4/5 to 1 7/8. Snout 3 2/3 to 4 in head from upper jaw tip; eye 3 2/5 to 4, 1 to 1 1/8 in snout, 1 1/8 to 1 1/4 in interorbital; maxillary reaches to or 1/8 in eye, expansion 1 7/8 to 2 in eye, length 2 1/2 to 2 7/8 in head from upper jaw tip; teeth feeble, very minute; interorbital 3 2/5 to 4, but little convex. Gill rakers 8 to 10 + 21 to 23, lanceolate, little less to equal gill filaments or 1 3/4 in eye.

Scales 70 to 72 in lateral line to caudal base and 5 or 6 more on latter; 7 scales above lateral line, 14 or 15 below, 26 to 28 predorsal forward opposite front pupil edge. Scales with 10 to 14 basal radiating striae; apical denticles 30 to 65, with 1

below lateral line above and little posterior to second or over anal fin origin; 2 posterolaterals, first or lower over and little posterior to last anteroanal, upper over and little posterior to second close below lateral line; 4 precaudals, lower 3 continuous with posteroanals and arched at base of lower caudal lobe, third elevated close below or at end of lateral line. Supracaudal luminous scales 3, infracaudal 4 to 7.

D. III, 11, I, first branched ray 1 2/5 in total head length; adipose fin 3 1/5 to 5; A. III, 14, I or III, 15, I,

Ceylon, India?, Tonkin, China, Japan. A handsome species, with quite distinctive color pattern.

49464 U. S. N. M. Toby, Japan. Albatross Collection. Length, 125 to 128 mm. 2 examples.

49469 U. S. N. M. Yokohama. Albatross Collection. Length 105 mm.

49474 U. S. N. M. Tokyo. Albatross Collection. Length 147 mm.

57522 U. S. N. M. Japan. P. L. Jouy. Length 175 mm.

75489 U. S. N. M. Wakanoura. Jordan and Snyder. Length 288 to 292 mm. 2 examples.

first branched ray 1 4/5; caudal 1 1/3, well forked; least depth of caudal peduncle 2 1/2 to 2 4/5; pectoral 2 1/4 to 3 1/8; ventral 2.

Blackish, also rays and membranes of fins. Ventrals with distinct whitish blotch on inner rays. Opercles and inside gill opening blackish. Fins pale brown generally.

Pacific Ocean.

D. XII, 15, fourth spine 1 1/2 to 1 3/5 in head, fifth ray 1 3/4 to 2; A. III, 7, second spine 1 4/5 to 1 7/8; caudal 1 1/4 to 1 1/3, rounded in young, truncate with age; least depth of caudal peduncle 2 3/5 to 2 4/5; pectoral 1 1/3 to 1 1/2; ventral 1 1/2 to 1 2/5.

Brown, paler below. Arched dusky band from head above till about opposite anal. From third to seventh dorsal spines second dusky band bends in parallel arch to upper part of caudal base. Along soft dorsal base third short paler band, though darker than body color. Between uppermost dark band and second numerous dark spots. Ventrals usually with dark tips.

4059

44289 U.S.N.M.

Albatross Collection. (2923). Length
178 mm. Type of Myctophum regale.
87559 U.S.N.M.

Albatross Collection (5695). Length
74 mm.

depth 2 2/5 to 2 1/2; head 3, width 1 7/8 to 2. Snout 2 1/2 to 2 7/8 in head; eye 3 to 4 4/5, 1 1/5 to 1 7/8 in snout, greater than interorbital in young to 1 2/5 in interorbital with age; teeth minute, in narrow bands in jaws; maxillary not or to eye, length 3 in head; interorbital 3 1/2 to 4, convex; preopercle edge finely serrate. Gill rakers 7 + 15, lanceolate, 1 1/2 in gill filaments.

Scales 90 to 95 along above lateral line, 65 to 70 along below; 17 scales above lateral line, 23 below, 50 predorsal forward opposite front nostril. Scales with 8 or 9 basal radiating striae; apical denticles 45 to 47, small, with 8 or 9 transverse series of basal elements; circuli fine.

4060

Lampanyctus alatus Goode and Bean

Lampanyctus alatus Goode and Bean, Oceanic Ichth., 1895, p. 79, pl. 24, fig. 92. N. Lat. 28°43' W. Long. 87°14'30", 525 fathoms. — Jordan and Evermann, Bull. U. S. Nat. Mus., no. 47, pt. 1, 1896, p. 539 (compiled). — Parr, Bull. Vanderbilt Oceanogr. Mus., vol. 1, art. 1, 1928, p. 12 (Mediterranean).

— Parr, Prov. U. S. Nat. Mus., vol. 76, 1929, p. 25, fig. 12 (type). — Norman, Discovery Rep., vol. 2, 1930, p. 330 (S. 48°09' W. 52°56', 90 meters; S. 39°50'30" W. 36°23', 1500 meters; S. 33°50' to 34°13' E. 16°4' to 15° 49', 859 to 950 meters; S. 46°56' W. 46°03', 1050 to 1350 meters; S. 35°01' E. 10°18', 250 meters; S. 00°46' E. 5°49'15", 859 to 950 meters; S. 2°13' E. 1°52', 71 meters; S. 2°43'30" W. 00°56'30", 125 to 175 meters; S. 3°06 30" W. 3°53', 125 meters; N. 3°04'45" W. 16°52', 125 to 225 meters; N. 4°33'15"

W. 16°52'45", 100 to 150 meters; N. 8°12' W. 18°49', 120 meters; N. 12°8' W. 20°53'30", 163 meters).

Myctophum (Lampanyctus) alatus Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, Tiefsee Fische, 1906, p. 244, text figs. 161–162 (N. 24°43'4" W. 17°1'3", south of Canaries; N. 8°58' W. 16°27'9", off Sierra Leone; N. 5°5'3" W. 13°27'5"; N. 2°36'5" E. 3°27'5", Gulf of Guinea; S. 36°23'4" E. 17°38'1", south of Cape Colony; S. 37°31'2" E. 17°1'6"; S. 30°6'7" E. 87°56'4", north of New Amsterdam; S. 10°8'2" E. 97°14'9", north of Cocos; S. 6°19'3" E. 73°18'9", Chagos; S. 2°38'7" E. 65°59'2", between Chagos and Seychelles; S. 2°43'8" E. 61°12'6"; S. 4°34'8" E. 53°42'8", between Seychelles and Zanzibar).

Lampanyctus (Lampanyctus) alatus Zugmayer, Res. Camp. Sci. Monaco, vol. 35, 1911, p. 38 (N. 43°14' E. 7°39'15", 500 meters; N. 28°4' W. 16°49'30", 1000 meters; N. 31°42' W. 42°40', 2000 meters; N. 39°36' W. 26°5', 2500 meters; N. 36°51'30" W. 1°30', 1300 meters; N. 43°31' E. 7°47', surface; N. 40°19' W. 13°11', 3000 meters; N 36°54'30" W. 11°49', 5100 meters; N. 36°5'30"

W. 9°00'30", 3660 meters). — Barnard, Ann. South African Mus., vol. 21, pt. 1, 1925, p. 240 (off Cape Point and East London, 300 to 800 fathoms).

4063

Lampanyctus pseudoalatus Taaning

Lampanyctus pseudoalatus Taaning, Rep. danish oceanogr. Exped., no. 5, vol. 2, a. 7, 1918, p. 108. N. 20° W. 21°55'; N. 35°31' W. 55°58'; Vidensk. Medd. dansk naturh. Foren. Köbenhavn, vol. 86, 1928, p. 66 (diagnosis in key). — Parr, Bull. Bingham oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 90 (note).

Depth 5 to 5 4/5; head 3 1/4 to 3 3/5, width 2 3/4 to 2 4/5. Snout 6 to 7 1/2 in head from snout tip; eye 3 3/4 to 4 4/5, greater than snout, 1 1/8 to 1 1/5 in interorbital; maxillary extends 1 1/2 eye diameters behind eye though not quite to well inclined hind preopercle edge, slender, length 1 1/4 to 1 2/5 in head from snout tip; interorbital 3 1/4 to 3 1/2, low. Gill rakers 4+10, lanceolate, slender, 1 1/4 in eye; gill filaments 3/5 of gill rakers.

Scales 36 in lateral line, enlarged; 2 above, 3 below, 15 predorsal to occiput. Caudal base scaly. Scales with 2 basal radiating striae; circuli fine,

complete.

A small antorbital photophore little inferior at front eye edge; single large photophore in middle of cheek and many more minute ones scattered about, especially below; small humeral photophore before end of maxillary though behind large photophore on middle of cheek; 2 opercular, upper larger and in line with lower eye edge and second pectoral photophore, lower below and behind hind maxillary end; 3 equidistant veiled branchiostegals; 5 pectorals, first interspace greatest, second

shortest, fourth elevated level with upper subpectoral and little behind third pectoral; 1 suprapectoral, close below lateral line before subpectorals; 2 subpectorals, first or lower posterior to upper close below and before lowest pectoral fin ray bases, upper still forward of upper pectoral fin ray bases; 4 ventrals, second slightly highest; 1 supraventral, close below lateral line opposite ventral fin base; 4 to 8 + 6 to 9 anals, posteroanals all behind anal fin base; 3 supraanals, first and second nearly level or first slightly higher

than second, nearly level with upper subpectoral, first over and little behind second ventral, second behind fourth ventral, third close below lateral line little before first anteroanal; 2 posterolaterals, first behind and above though closer to last anteroanal, second or upper close below lateral line opposite adipose fin base; 4 precaudals, first 3 low, second most posterior and higher than first and second, fourth at end of lateral line. Supracaudal luminous scales 3 or 4, infracaudal 3 to 6. Luminous scale on adipose fin. Minute luminous organs

scattered over head and body, especially its lower half, - all smaller than prominent photophores.

D. III, 9, I or III, 10, I, first branched ray 1 2/5 to 1 4/5 in total head length; adipose fin 2 3/5 to 4; A. III, 13, I to III, 16, I, first branched ray 1 3/4 to 2 2/3; caudal 1 1/5 ?; well forked; least depth of caudal peduncle 2 1/5 to 3; ventral 1 3/5 to 2 ?; pectoral reaches middle of anal or base of last anal ray, 2 to 2 4/5 in combined head and body to caudal base.

Brown, scale pockets darker. Iris gray. Fins all pale. Recent specimens more or less blackish, especially head.

4069

Atlantic and Indian Oceans.

43769 U.S.N.M. N. 28° 43' W. 87° 14'
30". In 525 fathoms. Albatross
Collection (2393). Length 50 to 55 mm.
2 examples. Types of Lampanyctus alatus.

86126 U.S.N.M. Gulf of Mexico.
March 23, 1917. Grampus Collection
(10474). Length 14 to 21 mm, 2 examples.

86127 U.S.N.M. Gulf of Mexico.
March 23, 1917. Grampus Collection
(10482). Length 57 mm.

.4071

Lampanyctus intricarius Taaning

Lampanyctus intricarius Taaning, Vidensk. Medd. Dansk naturh. Forenh. Köbenhavn, vol. 86, 1928, p. 67. Bay of Cadiz; north Atlantic; diagnosis in key. — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, 1928, p. 90 (reference). — Norman, Discovery Rep., vol. 2, 1930, p. 330 (S. 39°50'30" W. 36°23', 1500 meters; S. 33° 53'45" E. 9°26'30", 1000 meters; S. 33°20' to 33°46' E. 15°18' to 15°08', 625 to 675 meters; S. 33°50' to 34°13' E. 16°04' to 15°49', 850 to 950 meters; S. 45°03' E. 17°03', 850 to 950 meters; S. 36°09' W. 5°33', 300 meters).

4072

Cheeks with 1 photophore; anals 9 or 10 + 8 or 9, first 2 anteroanals displaced ventrally to line through following photophores of series; second anteroanal even lower than anteroanal; first and second supra-anals not in line parallel to that passing through third supraanal, supraventrall and fourth pectoral; precaudals 2 + +, anterior sometimes nearer to ultimate posteroanal than to second precaudal. Luminous scale on adipose fin. Luminous scales only supracaudal and infracaudal before rudimentary caudall rays.

D. 14 or 15; A. 19 or 20; pectoral very long, reaches anal.

(Jaaning.

~~North Sea~~ Atlantic Ocean.

4073

Lampanyctus crocodilus (Risso)

Serpe crocodilus Risso, Ich. Nice, 1810, p. 357. Nice.

Scopelus crocodilus Risso, Mem. Accad. Sci. Torino, vol. 25, 1820, p. 265, pl. 10, fig. 1 (Nice); Hist. Nat. Eur. Mérid., vol. 3, 1826, p. 466 (Nice). — Valenciennes, Hist. Nat. Poiss., vol. 22, 1849, p. 447 (Nice). — Moreau, Poiss. France, vol. 3, 1881, p. 502, fig. 202 (Nice). — Vinciguerra, Ann. Mus. Civ. Stor. Nat. Genova, ser. 2, vol. 2, 1885, p. 461 (Genoa). — Raffaele, Mitth. Zool. Stat. Neapel, vol. 9, 1889, p. 184, pl. 7, fig. 10. — Lütken, Kgl. Danske Videnske. Selsk. Skr. Kjöbenhavn, ser. 6, vol. 7, 1892, p. 263

fig. 22 (2.33° W. 40°). — Carus, Prodr. Zool. Medit., vol. 2, 1893, p. 565 (compiled). — Holt and Byrne, Dep. Agric. Tech. Instr. Ireland Sci. Invest., No. 6, 1911, p. 26, pl. 1, figs. 2-7 (Irish Atlantic slope, to 1150 fathoms).

Lampanyctus crocodilus Bonaparte, Cat. Met. Pesc. Eur., 1846, p. 36 (Mediterranean; part). — Goode and Bean, Oceanic Ichth., 1895, p. 79, pl. 23, fig. 86 (Nice). — Jordan and Evermann, Bull. U. S. Nat. Mus., No. 47, pt. 1, 1896, p. 558 (copied). — Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1911 (1912), p. 569 (Bonaparte example). — Taaning, Rep. Danish Oceanogr. Exped., No. 5, 1918, vol. 2,

4075

Biol. A. 7, p. 112, figs. 44–45 (Mediterranean, Sea of Marmora, Messina, Atlantic). — Vaillant, Rés. Camp. Sci. Monaco, vol. 52, 1919, p. 130 (off Morocco, 3475 meters). — Taaning, Videnskb. Medd. Dansk naturhist. Foren. Kjöbenhavn, vol. 86, 1928, p. 67 (North Atlantic; Mediterranean; diagnosis in key). — Parr, Bull. Bingham Oceanogr. — Borodin, Bull. Vanderbilt Oceanogr. Mus., vol. 1, art. 1, 1928, p. 12 (Mediterranean).

Myctophum (Lampanyctus) crocodilum

Brauer, Zool. Anzeiger, vol. 28, nr. 10, dec. 20, 1904, p. 397 (diagnosis in key); Deutsch. Tiefsee Exped. Valdivia, vol. 15, 1906, Tiefsee-Fische, p. 248,

Biol. A. 7, p. 112, figs. 44–45 (Mediterranean, Sea of Marmora, Messina, Atlantic).—

Vaillant, Rés. Camp. Sci. Monaco, vol. 52, 1919, p. 130 (off Morocco, 3475 meters).

—Taaning, Vidensk. Medd. Dansk naturhist. Foren. Kjöbenhavn, vol. 86, 1928, p. 67 (North Atlantic; Mediterranean; diagnosis in key). V— Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, 1928, p. 90 (compiled); Proc. U. S. Nat. Mus., vol. 76, 1929, p. 27, fig. 3 (type of Lampanyctus gemmifer).

Myctophum (Lampanyctus) crocodilum Brauer, Zool. Anzeiger, vol. 28, nr. 10, Dec. 20, 1904, p. 397 (diagnosis in key); Deutsch. Tiefsee Exped. Valdivia, vol. 15, (1906, Tiefsee-Fische) p. 248,

material

figs. 164-165 (on Lütken's).

Myctophum (Lampanyctus) crocodilus Zugmayer, Rés. Camp. Sci. Monaco, vol. 35, 1911, p. 41 (N. 37° 9' W. 11° 55', to 5000 meters). — Pietschmann, Sitzs. Ber. Akad. Wiss. Wien, Math.-naturw. Klasse, vol. 123, pt. 1, 1914, p. 451, pl. 5, fig. 2 (larva).

Myctophus bonapartii Coco, Innov. Ann. Sci. Nat. Bologna, vol. 2, 1838, p. 189, pl. 7, fig. 10. Messina).

Lampanyctus bonapartii Bonaparte, Fauna Italica, Pesc. 3, pt. 1, fasc. 27, 1840, descr., pl. fig. 5 (Italy).

Scopelus bonapartii Günther, Cat. Fishes Brit. Mus., vol. 5, 1864, p. 414 (Mediterranean).

— Canestrini, Fauna Italica, Pesci, 1874, p. 125 (Sicily).

Lampanyctus gemmifer Goode and Bean, Oceanic Ichth., 1895, p. 80, pl. 23, fig. 88. N. 39°39'45" W. 71°35'15", 538 fathoms, Grand Banks. — Jordan and Evermann, Bull. U. S. Nat. Mus., No. 47, pt. 1, 1896, p. 559 (compiled). — Tanning, Videnska. Medd. Dansk naturh. Foren. Kjöbenhavn, vol. 86, 1928, p. 67 (diagnosis in key). — Borodin, Bull. Vanderbilt Oceanogr. Mus., vol. 1, art. 1, 1928, p. 11 (Jamaica).

Myctophum (Lampanyctus) gemmifer Brauer, Zool. Anzeiger, vol. 28, 1904, p. 397 (diagnosis in key); Deutsch. Tiefsee Exped. Valdivia, vol. , Tiefsee-Fische, 1906, p. 246 (part). — Zugmayer, Rés.

Camp. Sci. Monaco, vol. 35, 1911, p. 40 (Madeira, 2286 meters). — Murray and Hjort, Depths of the Ocean, 1912, 613 (Azores, 1235 meters). — Pappenheim, deutsch Südpolar Exped., vol. 15, Zool. pt. 7, 1914, 187 (N. 24°41'; W. 32°21'; northwest of Cape Verde Islands, 20 meters).

Depth 5 to 6 1/3; head 3 to 3 1/2, width 2 1/5 to 3. Snout 6 1/5 to 7 1/2 in head from snout tip; eye 4 2/5 to 5, greater than snout, 1 1/8 to 1 1/4 in interorbital; maxillary reaches 1 1/2 to 2 1/5 eye diameters beyond eye though not quite to hind well inclined preopercle edge, slender, length 1 1/4 to 1 2/5 in head from snout tip; interorbital 3 1/2 to 5, level. Gill rakers

4 or 5 + 10, slender, lanceolate, 1 to 1 1/5 in eye; gill filaments 1 2/3 in gill rakers.

Scales 38 to 40 in lateral line to caudal base, enlarged, deep, narrowly imbricated; 3 above, 3 below, 14 predorsal to occiput. Caudal base scaly. Scales all very caducous, mostly lost in preserved examples.

One small infero-antorbital photophore; 3 on cheek, first rather close above middle of maxillary length, second postocular above first, third little before hind maxillary end on line with first and lower eye edge; 1 humeral, little before posterior photophore on cheek;

2 opercular, upper larger, in line with lower eye edge and second pectoral photophore, lower usually veiled, behind and below hind maxillary end; 3 veiled equidistant branchiostegals; 5 pectorals, first interspace greatest, fourth photophore little before or over third pectoral, at same level as upper subpectoral; 1 suprapectoral, rather close below lateral line and little behind first pectoral; 2 subpectorals, first or lower little behind second pectoral below pectoral fin base, upper close before bases of upper pectoral rays, all subpectorals and suprapectoral in

same inclined line; 4 or 5 ventrals, usually equidistant at same level (sometimes third elevated above interspace between second and fourth though not quite so high as lower subpectoral; 7+9, anteroanals slightly arched from anal fin base; posteroanals behind anal fin base; 1 supraventral, slightly above middle in space between ventral fin origin and lateral line; 3 supraanals, first over or behind third ventral, second slightly higher than first ray at level with upper subpectoral and fourth pectoral over or little behind fourth ventral and third close below lateral line over anal fin origin before

first anteroanal; 2 posterolaterals, first posterior though little nearer last anteroanal than uppermost posterolateral which close below lateral line; 2 precaudals at base of lower caudal lobe, first or lower opposite though well removed from third or upper which close below end of lateral line. Supracaudal luminous plates 3 to 4, infracaudals 6 to 6.

D. III, 11; I, first branched ray 1 3/5 to 2 1/5 in total head length; adipose fin 4 1/4 to 5 1/2; A. III, 13, I to III, 15, I, first branched ray 1 2/3 to 2 1/8; caudal 1 1/10, forked; least depth of caudal peduncle

2 2/3 to 4; ventral 1 4/5 to 2; pectoral about 3 to 3 1/8 in combined head and body to caudal base.

Dull brownish, scale pockets dusky. Iris deep brown. Opercle and inside mouth dusky to blackish. Iris gray. Fins pale to whitish.

Atlantic and Mediterranean.

35604 U.S.N.M. N. 39° W. 71°

Albatross Collection. Length 173 mm.

Type of Lamprogyctus gemmifer.

40049 U.S.N.M. Nice, France.

Florence Museum. Length 203 mm.

49350 U.S.N.M. Nice. M. Bellotti.

Length 165 mm.

and A.N.S.P. Messina,

Italy. C.L. Bonaparte Collection (467).

Dr. T. B. Wilson. Length 53 to 87 mm. 2 examples.

In very poor preservation. Largely agree with Cocco's figure of Myctophus bonaparti. This shows the pectoral fin reaching back far as last fourth in the anal base while in my specimens all damaged now probably never extended beyond the anal fin origin. In the larger specimen above from Nice the pectorals do not appear to have extended beyond the middle of the depressed ventrals.

4085

Lampanyctus tanningi Parr

Lampanyctus tanningi Parr, Proc. U. S. Nat. Mus., vol. 76, 1929, p. 27. Exuma Sound, Bahamas.

Myctophum (Lampanyctus) gemmifer (not Goode and Bean) Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 5, Tiefsee-Fische, 1906, p. 246, fig. 163 (German South Polar Expedition). — Zugmayer, Res. Camp. Sci. Monaco, vol. 35, 1911, p. 40 (off Portugal). — Pappenheim, Deutsch. Südpolar Exped., vol. 15, pt. , 1914, p.

Lampanyctus gemmifer Taaning, Rep. Danish Oceanogr. Exped. Medit., no. 5,

1918, p. 108, figs. 42 - 43 (Mediterranean; Atlantic); Vidensk. Medd. Dansk naturh. Foren. Köbenhavn, vol. 86, 1928, p. 67 (North Atlantic; diagnosis in key).

— Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. (90) 112 (N. 22° to 32° W. 64° to 76°, 5000 to 8000 feet).

depth 5; head 3 3/5, width 2 1/2. Snout 5 3/4 in head; eye 4 4/5, greater than snout, 1 1/5? in interorbital; maxillary extends 1 1/2 eye diameters behind eye though not quite to hind oblique preopercle edge, slender, length 1 1/3 in head; interorbital 3 3/4, convex. Gill rakers 4 + 11, lanceolate, slender, equal eye; gill filaments 3/5 gill rakers.

Scales 34 in lateral line to caudal base, not enlarged; 3 above, 3 below. Scales very caducous, all fallen.

Small supero-antorbital photophore; cheeks with postocular photophore little less than eye diameter distant from eye,

4630, 4631. Grande Island Reef. January 8, 1906. Length 139 to 163 mm.

13205. Jolo. March 7, 1906. Length 143 mm.

12974. Lanao Point, Luzon. June 24, 1909. Length 113 mm.

4722, 9439 to 9441. Ligpo Point, Balayan Bay: January 18, 1908. Length 134 to 190 mm.

14815, 22234. Little Santa Cruz, Zamboanga. May 26, 1908. Length 121 to 173 mm.

14662, 14663. Lode Bay, Mestacado Island. March 13, 1909. Length 153 to 177 mm.

14563. Maculabo Island. June 14, 1909. Length 125 mm.

11814. Matnog Bay, Luzon. May 31, 1909. Length 168 mm.

another lower before hind maxillary end; 2 opercular, upper in line with lower eye edge and upper subpectoral, close behind hind maxillary end; 3 equidistant veiled branchiostegals; 5 pectorals, first interspace longest, fourth level with upper subpectoral and little behind third; 1 suprapectoral at upper 2/5 between lateral line and pectoral fin origin, before upper subpectoral; 2 subpectorals, first or lower little below upper and close before and below lowest pectoral fin rays, upper close below pectoral fin origin; 4 ventrals, level, about equidistant;

17139, 17140. Cabugan Grande Island. July 30, 1909. Length 131 to 170 mm.

9857. Cagayan, de Jolo, Jolo Sea. January 8, 1909. Length 156 mm.

6797. Candaraman Island. January 4, 1909. Length 148 mm.

10975. Cannakala Bay, Luzon. March 11, 1909. Length 144 mm.

20722. Capunuyugan Point, Generale Island. May 10, 1908. Length 10, 1908.

11848 to 11851. Caracaran Bay, Bataan Island. June 8, 1909. Length 104 to 138 mm.

7144. Casogoran, Malkon Island. July 27, 1909. Length 181 mm.

15468. Galera Bay. June 9, 1908. Length [redacted] 118 mm.

1 supraventral, midway between lateral line and ventral fin origin; 6 or 7 + 7 anals, posteroanals behind anal fin base; 3 supraanals, first level with fourth pectoral over and behind second ventral, second or median level with first or scarcely elevated and over fourth ventral, third or uppermost over and slightly behind second or over vent or lateral line; 2 posterolaterals, first behind and above last anteroanal, third or uppermost still posterior on lateral line; 4 precaudals, first and second close, on lower rudimentary caudal rays, third still higher

5688. Agojo Point, Catanduanes Island, Luzon. June 10, 1909. Length 152 mm.

6515. Alibijaban Island. March 6, 1909. Length 152 mm.

11202, 16005, 16006, 17701, 22105. Alimango Bay, Burias Island. March 5, 1909. Length 104 to 152 mm.

14778. Bagacay Bay, Escarpada Island. March 13, 1909. Length 160 mm.

~~9287~~ 23723. Biri Channel. June 1-2, 1909. Length 106 mm.

9287. Biri Channel. June 1, 1909. Length 130 mm.

17700. Busin Harbor, Burias Island. March 8, 1909. Length 141 mm.

18734. Butauanan Island, Luzon. June 13, 1909. Length 139 mm.

and posterior, fourth still posterior at end of lateral line. Supracaudal luminous scales 4, infracaudal 8.

D. III, 10, I, first branched ray 1 1/8 in total head length; adipose fin 3; A. III, 14, I, first branched ray 1 1/2; caudal 1 1/4?, forked; least depth of caudal peduncle 2 2/5; pectoral 1 1/2; ventral 1 4/5.

Dark brown, scale pockets blackish. Head and inside gill opening blackish. Iris dark gray. Fins brownish.

Atlantic Ocean. Distinguished from Lampanyctus crocodilus (Risso) by the absence of luminous scales on the adipose ~~fin~~

with back. Posteriorly along middle of flanks 5 oblique rows of " dusky olive small spots, one " to each scale. Finally on still posteriorly are elongated whitish blotch nearly twice diameter of eye. Iris pale reddish, or yellowish brown Broad dusky brown area on opercle vertically. Iris all pale brownish, little darker terminally.

East Indies, Philippines. There is little doubt but that Scolopsis bulanensis Evermann and Seale is the young. They state it is related to Scolopsis personatus, but there is no question but what they ignored Günther's excellent figure in their comparison; as their selection of Scolopsis personatus is irrelevant..

fin and by the presence of only 2 photophores on each cheek.

89715 U. S. N. M. N. 24° 5' W. 76° 37' 30", Exuma Sound, Bahamas. Pawnee Station 26. March 17, 1927. Bingham Oceanographic Collection. Length 58 mm. Paratype.

[illegible] ughout. Scaled dorsal pale with shades of blue and
[illegible]ked membranes dusky pink, spines and rays darker
purplish. Anal membrane pink, becoming scarlet pos-
y; posterior rays bluish. Ventral hyaline, flushed
almon. Pectoral with hyaline membrane and pink rays;
[illegible]; axil black, including blotch

Genus Diaphus Eigenmann and Eigenmann

Diaphus Eigenmann and Eigenmann, Proc. California Acad. Sci., ser. 2, vol. 3, 1890, p. 3. Type Diaphus theta Eigenmann and Eigenmann, orthotypic.

Æthoprora Goode and Bean, Oceanic Ichth., 1895, p. 86. Type Myctophum metopoclampum Cocco, designated by Jordan, Genera of Fishes, pt. 4, 1920, p. 467.

Colletia Goode and Bean, Oceanic Ichth., 1895, p. 88. Type Nychtophus rafinesquii Cocco, orthotypic.

Lamprosa Jordan and Hubbs, Mem. Carnegie Mus., vol. 10, no. 2, June 27, 1925, p. 156. Type Diaphus anteorbitalis Gilbert,

orthotypic.

Panthophos Jordan and Hubbs, Mem.
Carnegie Mus., vol. 10, no. 2, June 27, 1925,
p. 156. Type Diaphus glandulifer
Gilbert, orthotypic.

Antorbital luminous organs 1 or 2
and sometimes 1 or 2 suborbitals, often
greatly enlarged. Pectoral photophores
5, penultimate always out of level of
series, greatest interspace between first
and second. Suprapectoral always
above level of pectoral fin base. Both
subpectorals in line with pectoral,
oblique to base of pectoral fin. Ventrals
5, first 3 progressively elevated.

Anals in 2 groups, 4 to 6 + 4 to 6.
Supraanals in inclined line. One
posteroanal. Precaudals always 4,
separated from posteroanals.
Photophores with more or less distinct
dividing black septum. No luminous
organs dorsally on lateral line. No
precaudal luminous scales though
one often at suprapectoral.

(figured) Diaphus parri Fowler

× Zeitschr. f. Morph. u. Oekol. d. Tiere 94, 1932, p. 135, fig. 7 (type locality: Lat. 27° 21' S., Long. 175° 11' E., 4 e. of New Caledonia).

D. 3-185 P. 4486 - 2-68m.

2111 4095

Analysis of species

a.' No antorbital organs (upper represented by densely pigmented black globular body, apparently no longer functional). urolamprus.

a.² One antorbital each side, entirely above nostril; no supraorbital or suborbital luminous organs.

b.' Antorbitals very small, separated from each other by wide, median interspace.

c.' Upper supraanal and posterolateral in contact with or close to lateral line; supraventral nearer lateral line than ventral fin base.

d.' First anteroanal well elevated, nearly level with second supraanal; anals 6 or 7 + 5 or 6. agassizi.

d.² First anteroanal well elevated; anals 5 + 5 or 6; 2 supraanals; suprapectoral well below hind

opercle angle; supraventral nearer ventral base than lateral line.

gudgeri.

b.[2] Upper supraanal and posterolateral well below lateral line; supraventral little nearer lateral line than ventral fin base; first anteroanal well elevate, series crescentic; intervals between last 2 precaudals greater than other intervals.

faustinoi.

b.[3] Upper supraanal and posterolateral well below lateral line; supraventral midway between lateral line and ventral fin base or little nearer latter; first anteroanal not elevated.

c.[1] Last anteroanal well elevated, appears as additional posterolateral; interval of last 2 precaudals not greatly more than other precaudal intervals.

gemellari.

c.[2] Last anteroanal less abruptly elevated; interval between last 2 precaudals

much greater than other precaudal intervals. dofleini.

e.[3] Last anteroanal not elevated; precaudals equidistant; anals 5+6. nipponensis.

c.[2] All upper photophores far below lateral line; 1 posterosuborbital photophore; anals 3+3. harveyi.

b.[2] Antorbitals large, contiguious medially on snout. microps.

a.[3] One antorbital each side, extends from above nostril to below, reaching level of lower eye edge; antorbitals of two sides widely separated; no supraorbital or suborbital organs. garmani.

regani

a.[4] One antorbital each side, entirely above nostril; no lower antorbital, but single, distinct, simple suborbital at lower eye edge, widely separated

from (upper) antorbital; no supraorbital organ.

f.' Anal fin origin well behind or hardly opposite end of dorsal fin base.

g.' Luminous scales at suprapectoral, supraanal, posterolateral and last precaudal, usually at supraventral, fourth pectoral (elevated) and second and third ventrals, occasionally at first anteroanal and third precaudal; upper supraanal, posterolateral and last precaudal close to lateral line; supraventral much nearer lateral line than ventral fin base; antorbital extends mesad nearly to median crest; suborbital large, below or slightly behind eye center; and ls 6 + 5; eye 4. glandulifer.

g.^{2} Luminous scale only at suprapectoral, upper supraanal, posterolateral and

and last precaudal somewhat below lateral line; supraventral nearer ventral base than lateral line; anals 5 + 4 or 5; first anteroanal elevated; antorbitals of 2 sides very large, only separated by narrow median crest; suborbital small, narrow, under front half of eye; eye 3. fulgens.

♂. Luminous scale only at suprapectoral; upper supraanal and posterolateral in contact with and last precaudal close to lateral line; supraventral nearer lateral line than ventral base; anals 8 + 5; antorbitals of 2 sides narrow and widely separated; head 3; depth 4; suborbital small, below eye center; eye 3 3/5. vanhoeffeni.

♂. Luminous scale only at suprapectoral; upper supraanal and posterolateral at lateral line; supraventral midway between lateral line and ventral base or nearer former; antorbitals on 2 sides small and widely separated

from each other; suborbital minute, just before vertical from front edge of lens; depth 4 1/2 to 5 1/3; anal 6 to 8 + 4 to 6, first anteroanal not elevated; head 3 1/5 to 3 3/5.

dumerilii.

g. [5] Luminous scale only at suprapectoral; upper supraanal 2 diameters, posterolateral 1 diameter below lateral line; last precaudal scarcely above midway between ventral profile of caudal base and end of lateral line; supraventral midway between lateral line and ventral base; antorbital very small, scarcely half large as moderate suborbital which is below middle of eye; antorbitals widely separate; anal 6 + 5, first anteroanal elevated; eye 3 1/2.

hypolucens.

g. [6] Luminous scale only at suprapectoral; upper supraanal 1 diameter and posterolateral 1 diameter below lateral line; last precaudal 1 diameter below end of lateral line; supraventral

nearer ventral base than lateral line; anals 4 + 4, in crescent; eye 3 1/10 to 3 1/5. boringi.

f.[2] Anal fin origin clearly before end of dorsal fin base.

h. Antorbitals on 2 sides moderate, widely separate; suborbital very large, occupies nearly entire ventral edge of orbit; anal origin opposite last third of dorsal fin base; eye 3 1/2 to 4. lütkeni.

h.[2] Antorbital on each side extends mesad to median crest of snout; suborbital moderate, somewhat behind eye center; anal origin opposite last sixth of dorsal fin base; eye 3 3/5. suborbitalis.

a.[5] One single antorbital each side entirely above nostril; 2 suborbitals, larger anterior and small posterior organ, entirely separate or connected with each other by narrow

string of blacks; antorbitals probably always large and narrowly separated.

i.1 20 luminous scale at suprapectoral; front suborbital organ reaches nostril; anals 4 or 5+4.

brachycephalus.

2. ↗ fuvii 40 mm

i.2 Luminous scale at suprapectoral.

f.1 Eye moderate, 3 in head.

k.1 depth 3 1/4; suborbital spot at middle of lower eye edge.

longleyi.

k.2 depth 4 1/3; no suborbital spot at middle of lower eye edge.

intermedius.

f.2 Eye large, 2 3/5 to 2 4/5; antorbitals very large, circular, only narrowly separated in median.

rafinesquii.

a.6 One or 2 antorbitals, upper above nostril, very small or absent; separate ~~narrow antorbital organ or suborbital~~

narrow supraorbital organ along upper eye edge; long suborbital organ or suborbital extension of lower antorbital along lower orbital edge; circumorbital organs on 2 sides widely separated from each other.

l.' Eye 3 4/5; upper antorbital present. anteroorbitalis.

l.² Eye 4 2/3; upper antorbital absent?. adenomus.

a.⁷ Two antorbitals on each side, both very large, of simple outlines and separated from each other by horizontal boundary line so upper organ entirely above lower; upper part of lower antorbital expanding above nostril and extending mesad to median ethmoidal crest, which barely separates organs of 2 sides; upper antorbitals also meeting at median crest; no separate supraorbital or suborbital organs.

m.' Supraventral nearer ventral base than lateral line. macrophus.

m.[2] Supraventral nearer lateral line than ventral base. monodi.

a.[8] Two antorbitals each side, both very large, separated from each other by horizontal boundary line so upper organ entirely above lower; upper antorbital with sharply defined, small, circular, luminous body constricted somewhat over halfway off from its lower lateral edge above eye; lower antorbital with narrow extension along ventral edge of orbit, ending in similar circular extension below or slightly behind eye center; upper antorbitals of 2 sides meeting at median crest; no separate supraorbital or suborbital organs.
metoproclampus.

a.[9] Two antorbitals on each side, lower very large, extend upwards above nostrils to top of snout where reaching level of upper edge of upper antorbitals or even higher; upper comparatively small, close to upper margin of orbit and separated from upper lateral corner of lower antorbital

by nearly vertical septum; upper antorbitals thus widely separated from each other by upper parts of lower antorbitals, which meeting or only narrow separated in front along median ethmoidal crest; no separate supraorbital or suborbital organs.

n.[1] Eye 2 1/2 to 2 4/5; Dorsal 14 or 15; Anal 13 to 16; lower antorbital extending somewhat along lower margin of orbit. effulgens.

n.[2] Eye 3 to 3 4/5.

o.[1] Lower antorbital with ventral extension along lower edge of eye reaching to or past vertical from its center; Dorsal 17; Anal 16. chrysorhynchus.

o.[2] Lower antorbital entirely in advance of vertical from anterior margin of pupil; Dorsal 14 or 15; Anal 14 or 15. perspicillatus.

a.[10] Two antorbital organs on each side, upper rounded, above nostril and entirely above lower antorbital, which long and narrow.

and usually with narrow dorsal extension between nostril and eye reaching to or nearly to ventral edge of upper antorbital (); lower antorbitals of 2 sides always widely separated from each other; no supraorbital or separate suborbital organs.

f.' Upper antorbitals large, circular, only separated from each other by median interspace not wider than half their diameter; lower antorbital forming angle dividing into upper and lower portion without separating one from another. lucidus.

f.'' Upper antorbitals small and widely separated from each other.

g.' Upper supraanal, posterolateral and preopercle far below lateral line; eye 4; anals 6+5; supraventral nearer ventrals than lateral line; lower antorbital extending somewhat along lower edge of orbit () caeruleus. (water)

g.^{2} Upper supraanal less than diameter below lateral line, upper posterolateral and precaudal less 1 diameter below lateral line; eye 4 1/4 to 4 1/3; anals 4 + 6; supraventral little nearer lateral line than ventral fin base. parvii.

g.^{3} Upper supraanal and upper posterolateral 2 diameters lateral line; eye 4 2/5; anals 4 + 4; supraventral at lowest third between ventral base and lateral line. pacificus.

f.^{2} Upper supraanal and posterolateral in contact with or very near lateral line (rarely over 1 and always less than 2 diameters below).

r.^{1} Lower antorbital with hind ventral extension along lower edge of eye reaching to or beyond hind eye edge; supraventral midway between ventral fins and lateral line; head 3 3/5; eye 3 1/2; anals 6 or 7 + 4 or 5. tagamiensis.

r.[2] No posterior extension of lower
antorbital.

s.' Head 2 3/5; eye 4; depth 3 3/5;
supraventral slightly nearer
ventral fin base than lateral
line; anals 6+5. tanakae.

s.[2] Head 3 1/3 to 3 9/10; eye 4 1/2 to 5 1/5;
supraventral midway between
lateral line and ventral fin base.
problematicus.

s.[3] Head 3 1/5 to 3 4/5; eye 3 to 4 1/5.

t.' Depth 4 4/5 to 5 2/5; supraventral
nearer lateral line than ventral
fin base.

u.' Ventral base below or little
behind dorsal fin origin; head
3 1/5 to 3 1/2. splendidus.
u.[2] Ventral base before dorsal
fin origin; head 3 3/5. signatus.

t.[2] Depth 3 7/8 to 4,

~~v.[1] Head 3 2/5 to 3 3/5; eye 3 1/3 to 3 4/5; supraventral nearer lateral line than ventral fin base.~~

v.[1] Head 3 2/5 to 3 1/2; ventral origin well before dorsal origin. senoi.

v.[2] Head 3 1/2 to 3 3/5; ventral origin below dorsal origin. ehrhorni.

s.[4] Head 4; eye 4 1/2; depth 4 4/5; ventral origin below or slightly behind dorsal origin. latus.

4110

Diaphus urolampus Gilbert and Cramer

Diaphus urolampus Gilbert and Cramer, Proc. U. S. Nat. Mus., vol. 19, 1896, p. 408, pl. 38, fig. 1. Off Hawaii, in 295 & 310 fathoms. — Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, 1903 (1905), p. 591 (vicinity of Kauai, in 305 to 318 fathoms). — Jordan and Jordan, Mem. Carnegie Mus., vol. , No. 1, Dec. 1922, p. 12 (reference). — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 115 (note); Proc. U. S. Nat. Mus., vol. 76, art. 10, 1929, pp. 28, fig. 14 (type). ✓

— Fowler, Occas. Pap. Bishop Mus., vol. 9, No. 18, Feb. 1932, p. 4 (reference).

Trefser-Fische, 1906, p. 164 (diagnosis in key).

4110

Diaphus urolampus Gilbert and Cramer

Diaphus urolampus Gilbert and Cramer, Proc. U. S. Nat. Mus., vol. 19, 1896, p. 408, pl. 38, fig. 1. Off Hawaii, in 295 to 310 fathoms. — Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, 1903 (1905), p. 591 (vicinity of Kauai, in 305 to 318 fathoms). — Jordan and Jordan, Mem. Carnegie Mus., vol. , no. 1, Dec. 1922, p. 12 (reference). — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 115 (note); Proc. U. S. Nat. Mus., vol. 76, art. 10, 1929, p. 28, fig. 14 (type). ✓

Myctophum (Diaphus) urolampus Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 164 (diagnosis in key).

Mus., vol. 76
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Myctophum dumerili (not Bleeker) Weber and Beaufort, Fishes Indo Austral. Archipelago, vol. 2, 1913, p. 166 (part). Diaphus dumerili Fowler, Mem. Bishop Mus., vol. 10, 1928, p. 68 (Hawaii).

Depth 4 3/4 to 4 4/5; head 3 1/3 to 3 2/5, width 2 1/3 to 2 2/5. Snout 7 to 8 3/4 in head from snout tip; eye 3 1/5 to 3 1/4, greater than snout or interorbital; maxillary reaches well beyond eye though not quite reaching well inclined hind preopercle edge, slender, length 1 1/3 to 1 2/7 in head from snout tip; interorbital 3 1/4 to 3 1/2, nearly level. Gill rakers 7+17, lanceolate, 1 3/4 in eye, twice

gill filaments.

Scales 29 or 30 in lateral line to caudal base and 2 or 3 more on latter, not enlarged, tubes simple, conspicuous; 4 above, ? below, 10 predorsal (pockets). Scales thin, deciduous, cycloid. Axillary ventral scale 1/3 ventral fin.

Single small well elevated preorbital photophore; 2 opercular, upper larger and on line with lower eye edge and upper subpectoral, lower minute, veiled, behind rictus; 3 veiled equidistant branchiostegals; 5 pectorals, first interspace greatest; fourth photophore elevated little above level of upper subpectoral over and behind third pectoral; 1 suprapectoral, close below lateral line behind its origin; 2 subpectorals,

first or lower midway in inclined line from first pectoral and upper subpectoral, which close before bases of lowest pectoral rays; 5 ventrals, second and third elevated nearly at same level or nearly to level of upper subpectoral, last interspace longest; 1 supraventral, close below lateral line over ventral fin bases; 7 + 6 anals, first anteroanal elevated till little below level of lower supraanal close before second anteroanal and last anteroanal little elevated from fifth, posteroanals all behind anal fin base; 2 supraanals, first or lower about midway between last ventral and uppermost supraanal which close below lateral line, also first little advanced or not quite

forming continuous even series from last ventral; 1 posterolateral close below lateral line over break in anals; 4 precaudals in arc on lower caudal base progressively upward, with last rather close below end of lateral line. Long supracaudal luminous plate from behind adipose fin to caudal.

D. III, 10, I, or III, 9, I, first branched ray 1 1/4 to 1 1/3 in total head length; adipose fin length 3 3/4 to 4 1/3; A. III, 10, I to III, 12, I, first branched ray 1 7/8 to 2; caudal subequal with head, well forked; least depth of caudal peduncle 3 1/5 to 3 1/4; pectoral 1 3/4; ventral 1 2/3.

Body dark brown, thin sprinkled with darker dots, scale pockets dusky or darker.

Adherent scales, sides of head and iris silvery white, with bright iridescent tints, purplish on opercles. Fins all very light brown to whitish, articulations of rays darker.

Hawaiian Islands. This species as sketched by Parr does not agree with the types as he shows 3 supraanal photophores, the first and second surely wrongly placed. Where he indicates a second it should be slightly advanced from the plane with the last ventral and the uppermost supraanal. The first is surely an erroneous interpolation. The figure in question further omits the opercular. That the supraanals were important features in Gilbert's mind is shown in his subsequent

remarks as he calls attention to "the presence of but 2 (instead of 3) supra-anals" and even goes so far as to suggest it may be the type of a new genus "distinguished by the absence of preocular photophores," a mistaken premise as Parr has shown.

47709 U. S. N. M.

Albatross Collection (3472). ~~Dredgeholes.~~ Length 103 to 187 mm. Type (largest) and 2 paratypes.

47717 U. S. N. M.

Albatross Collection (8407). Length 58 mm., caudal tips damaged.

Diaphus agassizii Gilbert

Diaphus agassizii Gilbert, Mem. Mus. Comp. Zool., vol. 26, no. 6, 1908, p. 226, pl. 2. Mukahiva, Marquesas Group, 300 fathoms. — Norman, Ann. Mag. Nat. Hist., ser. 10, vol. 4, Nov. 1929, p. 510, fig. 1 (Matuku, Fiji Islands, 315 fathoms). — Fowler, Proc. U. S. Nat. Mus., vol. 80, art. 6, 1932, p. 4 (Taiohae, Marquesas Islands).

Diaphus agassizi Gilbert, Mem. Carnegie Mus., vol. 6, no. 2, 1913, p. 85 (Suruga Bay, Japan, 300 fathoms). — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 115 (note). — Fowler, Mem. Bishop Mus., vol. 10, 1928, p. 68 (compiled). — Parr, Proc. U. S. Nat. Mus., vol. 79, art. 19, 1929, p. 30 (type).

Lampanyctus warmingii Goode and Bean, Oceanic Ichth., 1892, pp. 80, 512 (compiled).

Lampanyctus warmingi Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 91, text fig. 11 (Atlantic materials); Proc. U.S. Nat. Mus., vol. 76, 1929, p. 13 (type of *Lampanyctus townsendi*).

Lampanyctus alatus (not Goode and Bean) Breder, Bull. Bingham Oceanogr. Collection, vol. 1, art. 1, 1927, p.

4118

Scopelus dumerilii (not Bleeker)
Günther, Rep. Voy. Challenger, vol.
22, 1887, p. 198 (Matuku specimen).

Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. (115) 126, text fig. 23 (Atlantic materials). — Fowler, mem. Bishop Mus., vol. 10, 1928, p. 68 (part; not Hawaiian materials). — Parr, Proc. U.S. Nat. Mus., vol. 76, 1929, p. 31 (type of Lampanyctus lacerta). Myctophum nocturnum Gey, mem. Hist. Nat. Cuba, vol. 2, 1860, p. 426. Havana.

Diaphus nocturnus Gilbert, Bull. Mus. Comp. Zool., vol. 46, 1906, No. 14, p. 255, pl. 1 (type; type of Lampanyctus lacerta).

Scopelus schmitzi Johnson, Proc. Zool. Soc. London, 1890, p.

Lampanyctus lacerta Goode and Bean, Oceanic Ichth., 1895, p. 81, pl. 24, fig. 89. Gulf Stream, in 142 to 671 fathoms.

Myctopum (Myctophus) lacerta Brauer,

Japan, Oceania. The supra-
pectoral photophore clearly above
hind angle of opercle, as shown
in Gilbert's figure and still
evident in his wretched minute
type specimen. Also the supra-
ventral lies about upper 2/5
or near upper 2/3 of space
between lateral line and ventral
fin base. Diaphus agassizi has
no antorbital luminous organ
other than a single superior
minute antorbital photophore,
though no infraorbital or
anteroinfraorbital.

4120

75-764 U.S.N.M.

Albatross Collection. September 15, 1899. Length 21 mm., caudal tips damaged. Type.
74649 U.S.N.M.

Albatross Collection (5063). Length 19 to 24 mm. 7 examples.
74650 U.S.N.M.

Albatross Collection (4969). Length 17 mm.
74657 U.S.N.M.

Albatross Collection (5064). Length 12 to 26 mm. 7 examples.

~~4124~~

Diaphus gudgeri new species

Depth 4 2/5 to 4 3/4; head 3 to 3 1/8, width 2 1/2 to 2 3/4. Snout 6 to 6 3/5 in head; eye 3 1/5 to 4 1/4, greater than snout, greater than interorbital in young to 1 1/5 in interorbital with age; maxillary reaches well beyond hind eye edge, though not to well inclined hind preopercle edge, slender, length 1 1/4 to 1 1/3 in head; interorbital 3 1/8 to 3 1/2, convex. Gill rakers 6+14, lanceolate, equal eye; gill filaments 3/5 gill rakers.

Scales 35 in lateral line to caudal base, not enlarged, tubes

simple, prominent ; 3 above, 4 below.
Caudal base scaly. Scales with
4 basal radiating striae ; circuli
moderately fine, obsolete apically.
Small antorbital luminous
body at middle of front eye edge ; 1
small opercular photophore, well
above hind end of maxillary though
slightly below line from lower eye edge
to upper suprapectoral ; 3 equidistant
veiled large branchiostegals ; 5 pectorals,
second interspace longest, fourth
photophore little above and between
third and fifth ; 1 suprapectoral at
lowest fourth between pectoral fin

origin and lateral line; 2 sub-
pectorals, form greatly inclined
line from first pectoral, equidistant,
upper close before bases of lowest
pectoral fin rays; 5 ventrals, third
elevated level with pectoral fin origin
over interspace between second and
fourth ventrals or little nearer last;
1 supraventral at lower 2/5 between
lateral line and ventral fin origin
or level with suprapectoral; 5+5 or
6 anals, first anteroanal elevated
close before second, slightly higher
than third ventral or little lower
than supraventral and fifth little

higher than fourth; posteroanals behind anal fin base; 2 supraanals, first little higher and behind last ventral and upper rather close below lateral line just before anal fin origin; 2 posterolaterals, first or lower forms continuous arc with last anteroanal and upper posterolateral which equally below lateral line as uppermost supraanal; arc of 4 precaudals, upper behind and little below end of lateral line. Luminous scale below suprapectoral.

D. III, 10, I or III, 11, I, first branched ray 1 1/5 to 1 2/5 in head; adipose

fin 4 to 5; A. III, 10, I to III, 12, I, first branched ray 2; caudal 1 1/8 to 1 1/5, well emarginate; least depth of caudal peduncle 2 4/5 to 3 1/2; pectoral 2 1/2 to 2 7/8; ventral 1 1/2 to 1 4/5.

Skin brown, with more or less scattered dusky specks or dots. Scales, sides of head and iris silvery white. Fins whitish.

Diagnosis. Related to Diaphus agassizii but with obsolete narrow antorbital luminous organ and the suprapectoral photophore well below the hind angle of the opercle or level

with the supraventral photophore, which nearer pectoral base than lateral line.

Type, No. U.S.N.M.

It is also greatly like Diaphus kylei Jäning, but differs in the arrangement of the photophores. In that species the small antorbital organ is shown level with the upper eye edge, first interspace of pectoral photophores longest, upper supraanal behind anal fin origin and shown well below lateral line,

D. 5544. Coronado Point, S. 37° W.,
21.5 miles (N. Lat. 8° 16' 30" E. Long.
122° 26' 30"), northern Mindanao
and vicinity. 759 fathoms.
September 6, 1909. Length 58 mm. Type.

D. 5451. East Point (Batan Island),
S. 38° E., 8.2 miles (N. Lat. 13° 22' 22"
E. Long. 124° 00' 48"). 380 fathoms.
June 5, 1909. Length 36 mm.

D. 5416. Lanis Point Light, N. 12°
E., 2.9 miles (N. Lat. 10° 11' 30" E. Long.
53° 3"), between Cebu and Bohol.
150 fathoms. March 25, 1909.
Length 40 to 46 mm. 3 examples.

4128

Diaphus faustinoi new species

Depth 3 4/5; head 2 3/4, width 2 1/2. Snout 7/4 in head; eye 3 3/4, greater than snout or interorbital; maxillary extends well behind eye but not to well inclined hind preopercle edge, slender, length 1 2/5 in head; interorbital 3 1/8, low. Gill rakers 7+12, lanceolate, 1 1/2 eye; gill filaments 2/3 of gill rakers.

Scales 30? in lateral line to caudal base, not enlarged; tubes prominent, simple; 3 above, 3 below. Caudal base scaley. Scales very caducous, most all fallen.

Antorbital luminous organ rather

long, along greater part of front
eye edge; 1 opercular, on line
photophore
with lower eye edge and pectoral
fin origin; 3 equidistant veiled
branchiostegals; 5 pectorals,
first interspace longest, fourth
photophore elevated nearly level
with upper subpectoral, over
third posteriorly; 1 suprapectoral,
little behind pectoral origin
about lowest fourth between pectoral
fin origin and lateral line; 2
subpectorals, first or lower midway
between first pectoral and upper
subpectoral, which close below
bases of lowest pectoral rays; 4
ventrals, first and second close,
third well elevated or about level
horizontally with upper subpectoral

or midway between second and fourth;
1 supraventral about upper 2/5
between lateral line and ventral
fin base; 4 + 4 anals, first
elevated level with third ventrals;
3 supraanals in line from last
ventral, uppermost well below
lateral line or about last third
between lateral line and vent; 2
posterolaterals, first or lower
little behind and above last
anteroanal, upper higher though
well below lateral line; 4
precaudals, equidistant, last
2 arching up towards and below
lateral line. ~~Su~~ Suprapectoral
with pale luminous body below
about twice its own diameter.

D. III, 10, I, first branched ray

1 2/5 in head; adipose fin 5; A. III, 9, I, first branched ray 2 1/5; caudal 1 1/5, well forked; least depth of caudal peduncle 3; pectoral 3 1/5; ventral 1 3/4.

Darks or dusky dots scattered over backs, on head and lower sides. Sides of head, iris and adherent scales silvery white, with iridescent reflections. Fins whitish with dusky or dark lines formed at articulations.

Diagnosis. Greatly like Brauer's figure of Myctophum (Diaphus) gemmellari (Cocco) though the suprapectoral photophore slightly lower than the supraventral in Diaphus faustinoi.

Type, No. , U.S.N.M. 4132

~~For~~ ~~Faustino;~~

D. 5190. Pescador Island, S. 9° E.,
10.70 miles (N. Lat. 10° 08' 15"
E. Long. 123° 16' 45"), Tanon Strait,
east coast of Negros. 295 fathoms.
April 1, 1908. Length 34 mm..

Diaphus gemellarii (Cocco)

Hygophus gemellarii Cocco, Nuovi Ann. Sci. Nat. Bologna, ser. 1, vol. 2, 1838, p. 186, pl. 7, fig. 9. Messina.

Myctophum gemellari Bonaparte, Icnogr. Fauna Italica, Pesc., vol. 3, pt. 1, fasc. 28, 1840, descr. (not figure) (Messina).

Myctophum (Hygophus) gemellarii Brauer, Zool. Anzeiger, vol. 28, Dec. 20, 1904, p. 392 (diagnosis in key).

Myctophum (Diaphus) gemellarii Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 212, text fig. 130 (not 131) (N. 24° 43' 4" W. 17° 1' 3", south of Canaries; N. 1° 27' 8" W. 10° 16' 5", Gulf of Guinea; S. 3° 55' E. 7° 48' 5"; S. 34° 13' 6" E. 80° 30' 9", north of New Amsterdam; S. 30° 6' 7" E. 87° 50' 4"). — Murray and Hjort, The depths of the Ocean, 1912, p. 613 (N. 29° 6' W. 25° 2'; N. 34° 59' W. 33° 1'; 2615 to 2865 meters; N. 36° 53' W. 29° 47', 3239 meters).

— Fage, Ann. Inst. Océanogr. Monaco, vol. 1, no. 7, 1910,

— Zugmayer, Rés. Camp. Sci. Monaco, fasc. 35, 1911, p. 29, pl. 1, fig. 8 (N. 41°29' W. 15°44', 2000 meters).

Scopelus gemellari Valenciennes, Hist. Nat. Poiss., vol. 22, 1849, p. 445 (in Bonaparte).

Scopelus gemellarii Günther, Cat. Fishes Brit. Mus., vol. 5, 1864, p. 415 (compiled). — Canestrini, Fauna Italia, Pesce, 1874, p. 126 (Sicily). — Vaillant, Exped. Sci. Travailleur et Talisman, Poiss., 1888, p. 117 (coasts of Morocco, Canaries, Soudan, 550 to 1635 meters). — Carus, Prodr. Faun. Medit., vol. 2, 1893, p. 564 (compiled).

Scopelus (Nyctophus) gemellarii Lütken, Kon. danske Vidensk. Selsk. Skrift. Kjöbenhavn, ser. 6, vol. 7, 1892, p. 260 (Messina).

Lampanyctus gemellarii Goode and Bean, Oceanic Ichth., 1895, p. 80, pl. 23, fig. 87 (Messina). — Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1911 (1912), p. 568 (Bonaparte example).

Diaphus gemellarii Taaning, Rep. Danish Oceanogr. Exped. Medit., No. 5, vol. 2, A. 7, 1918, p. 73, figs. 27 & 28 (Mediterranean); Vidensk. Medd. Dansk naturh. Foren. Köbenhavn, vol. 86, 1928, p. 58 (North Atlantic, Mediterranean).

Diaphus gemellari Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, 1928, p.

(115) 123, fig. 21 (caudal peduncle below) 22 (preanal photophores). (N. 23° to 32° W. 64° to 76°, 5000 to 8000 feet).

? Myctophum rafinesquii (not Cocco) Bonaparte, Icnogr. Fauna Italica, Pesc., vol. 3, pt. 1, fasc. 28, 1840 (not description), pl., fig. 2.

Scopelus uraecoclampus Facciola, Natural. Sicilia, vol. 3, 1882, p. 151. Messina.

Diaphus gemellarii (Cocco)

Nyctophus gemellarii Cocco, Nuovi Ann. Sci. Nat. Bologna, ser. 1, vol. 2, 1838, p. 186, pl. 7, fig. 9. Messina.

Scopelus gemellari Valenciennes, Hist. Nat. Poiss., vol. 22, 184 , p. 445.

Scopelus gemellarii Günther, Cat. Fishes Brit. Mus., vol. 5, 1864, p. 415 (compiled).

Scopelus (Nyctophus) gemellarii Lütken, Kon. Danske Vidensk. Selsk. Skrift. Kjöbenhavn, ser. 6, vol. 7, 1892, p. 260 (Messina).

Lampanyctus gemellarii Goode and Bean, Oceanic Ichth., 1895, p. 80, pl. 23, fig. 87 (Messina).

Nyctophum (Nyctophus) gemellarii

Depth 4 1/8; head 3 1/5, width 2.
Snout 5 3/4 in head; eye 4 1/4, greater
than snout, 1 1/2 in interorbital;
maxillary extends 1 1/2 eye diameters
behind eye though not quite to well
inclined hind preopercle edge, length
1 1/5 in head; interorbital 3 1/5, convex.
Gill rakers 6+12, lanceolate, slender,
equal eye; gill filaments 3/5 gill rakers.
Scales 32 in lateral line, not
enlarged; 3 above, 3 below, 12 predorsal
to occiput. Scales caducous, mostly
fallen. Caudal base scaly.
Small antorbital photophore at
front
upper eye edge; 2 opercular, upper

Brauer, Zool. Anzeiger, vol. 28, 1904, p. 392.

Myctophum (Diaphus) gemellari Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 5, Tiefsee-Fische, 1906, p. 212, text fig. 130-131 (north end of New Amsterdam).

Diaphus gemellari Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. (115) 123, text fig. 21 (caudal peduncle) (Atlantic materials).

Scopelus uroclampus Facciola, Naturalista Siciliano.

larger and on line from lower eye
edge passing between subpectorals,
lower close behind hind maxillary
end; 3 equidistant veiled branchiostegals;
5 pectorals, first interspace longest,
fourth spot elevated level with upper
subpectoral little behind third pectoral;
1 suprapectoral, at lower third or fourth
between lateral line and pectoral fin
origin; 2 subpectorals, first or lower
midway between upper and first
pectoral, upper close below and before
pectoral fin base; 5 ventrals, second
and third progressively higher so third
about level with pectoral fin origin,

though well before fourth ventral; 1 supraventral, at lower 2/5 between lateral line and pectoral fin base; 5 + 5 anals, last anteroanals arch upward and appear contiguous with posterolateral; posteroanals behind anal fin base, level; 3 supraanals, in nearly inclined line, first low and above fifth ventral, second little higher and third over front of anal fin about upper 2/5 in space below lateral line to anal fin origin; 1 posterolateral, below front of adipose fin; 4 precaudals, inclined along lower caudal lobe basally, with fourth

little below end of lateral line.

D. III, 13, I, first branched ray 1 1/4 in head; adipose fin 4 3/5; A. III, 11, I, first branched ray 2?; caudal 1 1/4?, forked; least depth of caudal peduncle 2 4/5; pectoral 4 1/2; ventral 2?.

Brown, scale pockets darker to dusky. Muzzle, jaws and fins all pale to whitish, with caudal base dusky. Iris dark gray.

Atlantic and Indian Oceans.

44170 U.S.N.M. Messina. Dr. T. Gigliolí. Length 70 mm.

Diaphus dofleini (Zugmayer)

Myctophum (Lampanyctus) dofleini

Zugmayer, Bull. Inst. Océanogr. Monaco,

No. 193, Jan. 20, 1911, p. 3. N. 34°2' W. 12°21',

4000 meters; N. 37°39' E. 0°20', 2170 meters;

N. 36°17' W. 1°58', 1800 meters; Rés. Camp.

Sci. Monaco, vol. 35, 1911, p. 35, pl. 1, fig. 9

(types).

Diaphus dofleini Taaning, Rep. Danish

Océanogr. Exped., No. 5, vol. 2, A. 7, 1918, p.

76, figs. 29-32 (Mediterranean, Messina,

Atlantic); Vidensk. Medd. Dansk.

Naturh. Foren, Köbenhavn, vol. 86, 1928, p.

5-8 (North Atlantic, Mediterranean). —

Parr, Bull. Bingham Oceanogr. Exped.,

vol. 3, art. 3, 1928, p. (115-)124 (N. 32° 24'
W. 64° 29', 5000 feet);
Myctophum (Diaphus) gemellari
(not Coco) Brauer, Deutsch Tiefsee
Exped. Valdivia, vol. 15, Tiefsee Fische,
1906 (p. 213), fig. 131. — Fage, Ann.
Inst. Océanogr. Monaco, vol. 1, No. 7, 1910,
p. , pl. 1.

Depth 3 3/4; head 2 9/10. Snout 5 1/3
in head; eye 4 3/5, greater than snout;
maxillary extends 1 1/4 eye diameters
behind eye, slender, length 1 1/3 in head;
interorbital moderate.

Small antorbital photophore

on upper front eye edge; 2 operculars, upper larger and little above upper hind end of maxillary; 3 branchiostegals; 5 pectorals, first interval greatly longer than others, fourth spot elevated till nearly level with upper subpectoral over interval between third and fifth pectorals; 1 supraventral, near lower third between lateral line and pectoral fin origin, little before upper subpectoral; 2 subpectorals, in line with first pectoral, first little nearer upper

subpectoral which close before bases of lowest pectoral rays; 5 ventrals, first to third progressively elevated so that third slightly above level of fourth pectoral or first supraanal; 1 supraventral, midway between lateral line or ventral base or level with suprapectoral, uppermost supraanal and posterolateral; anals 5 + 5, level, posteroanals behind anal fin base; 3 supraanals, in very slightly angular short series, equidistant, arise from similar interval behind and above last ventral, uppermost midway between lateral line and anal fin origin;

Diaphus agassizii Norman, Ann. mag. Nat. Hist., ser. 10, vol. 4, Nov. 1929, p. 510, fig. 1 (Matuku, Fiji Islands, 315 fathoms). — Fowler, Proc. U. S. Nat. Mus., vol. 80, art. 6, 1932, p. 4 (Taiohae, Marquesas Islands).

Scopelus dumerilii (not Bleeker) Günther, Rep. Voy. Challenger, vol. 22, 1887, p. 198 (Matuku specimen).

? Myctophum (Diaphus) lacerta (not Goode and Bean) Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 5, Tiefsee-Fische, 1906, p. 214, figs. 132–135

1 posterolateral, rather close above and behind last anteroanal, to which little nearer than to lateral line; 4 precaudals, progressively elevated along lower base of caudal, series slightly curved posteriorly and fourth spot highest on body or much nearer lateral line than any other.

D. IV, 11, first branched ray 1 2/3 in head; adipose fin 3 7/8; A. III, 11, first branched ray 2; caudal 1 1/6, forked; least depth of caudal peduncle 2 1/2; pectoral 2 1/5; ventral 1 2/3.

(Brauer's fig. 131.)

Lampanyctus warmingi (Lütken

Scopelus (Nyctophus) warmingi Lütken,

Kon. Danske Vidensk. Selsk. Skrift.

Kjöbenhavn, ser. 6, vol. 7, 1892, p. 259, fig.

19. Atlantic south of Azores.

Myctophum (Lampanyctus) warmingi

Brauer, Deutsch. Tiefsee Exped. Valdivia,

vol. 5, Tiefsee-Fische, 1906, p. 229, text fig.

149 (south of Canaries; Gulf of Guinea;

south and north of Cocos Islands; Bay of

Bengal; south of Ceylon; Mauritius).—

Barnard, Ann. South African Mus., vol.

21, pt. 1, 1925, p. 237 (off Cape Point,

in 600 fathoms).

4146

Diaphus nipponensis Gilbert

Diaphus nipponensis Gilbert, Mem. Carnegie Mus., vol. 6, no. 2, August 1913, p. 86. South of Kagoshima, N. Lat. 30° 34' E. Long. 129° 22', in 300 fathoms. — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 116 (reference); Proc. U. S. Nat. Mus., vol. 76, art. 10, 1930, p. 31, fig. 15 (type).

Depth 3 1/4; head 2 7/8, width 2. Snout 4 in head from its tip; eye 3 3/4, greater than snout, subequal with front of interorbital; maxillary extends well beyond eye, though not quite to well inclined hind preopercle edge, slender,

length 1 1/3 in head from snout tip; interorbital 3 3/4, convex. Gill rakers about 7 + 10?, lanceolate, slender, greater than gill filaments or less than half of eye.

Scales 36 in lateral line to caudal base and 2 more on latter, none enlarged, moderate, tubes distinct. Scales rather adherent, though number now fallen.

Minute preorbital photophore on orbital rim level with nostril; 1 large opercular, nearly twice its diameter above hind end of maxillary; 3 equidistant veiled branchiostegals; 5 pectorals, first interspace greatest, fourth photophore behind and above third about level with upper subpectoral;

1 suprapectoral, low, above and
before pectoral fin at lowest fourth
of space between lateral line and
pectoral fin origin; 2 subpectorals,
lower or first midway in line
from first pectoral to upper
subpectoral, last before lower
pectoral ray bases; 5 ventrals,
progressively higher from first to
third with third about level with
upper subpectoral and fourth
pectoral; 1 supraventral about
lowest third between lateral line
and ventral fin origin; 5+6
anals, posteroanals behind anal
fin base; 3 supraanals in inclined
line from over and little behind
last ventral, about equidistant
and 3 or uppermost over first
anteroanal about midway in space

between lateral line and first anteroanal; 1 posterolateral little above and opposite breaks in anals; 4 precaudals, equidistant, inclined in arc up to last which about midway in space below end of lateral line.

D. III, 13, first branched ray 2 in total head length; adipose fin nearly long as eye; A. II, 12, first branched ray 2 3/5 in total head length; caudal damaged; least depth of caudal peduncle 2 1/2; pectoral 4; ventral 2 1/5.

Skin light brown, scale pockets all dusted darker. Side of head and adherent scales with silvery luster. Fins whitish.

Japan.

74467 U.S.N.M.

4150

Albatross Collection (4920). Length 18 mm., caudal tips damaged. Type.

Diaphus harveyi new species

Depth 3 2/3; head 3, width 2 1/8. Snout 6 3/5 in head; eye 2 7/8, greater than snout or interorbital; maxillary extends well behind eye, though not to slightly inclined hind preopercle edge, slender, length 1 2/5 in head; interorbital 3 2/5, moderately high. Gill rakers about 6+10, lanceolate, 1 1/2 in eye.

Scales 30 in lateral line to caudal base, enlarged; 3 above, 3 below. Caudal base scaly. Scales very caducous, most all fallen.

Single small photophore on lower hind eye edge; 2 opercular, upper

in line with lower eye edge and upper subpectoral, lower veiled behind and below hind maxillary end; 3 equidistant veiled branchiostegals, more or less obscured by luminous masses; 5 pectorals, fourth little higher than upper subpectoral and over interspace of third and fifth; 1 ~~suprapectoral~~ pectoral, little before pectoral fin origin and at lowest fourth between same and lateral line; 2 subpectorals, first or lower midway between upper and first pectoral or little before suprapectoral, upper close before and below lowest pectoral

ray bases; 5 ventrals, third little behind second and level with fourth pectoral; 3 + 3 anals, first posteroanal over base of last anal ray; 3 supraanals, first close behind and little above last ventral, second little higher and posterior and third well below lateral line and opposite anal origin; 2 posterolaterals, first little above and behind last anteroanal and second also well below lateral line; 3 close set precaudals arched up toward end of lateral line of which last little below and highest of series. Indistinct luminous plate below

suprapectoral photophore.

D. III, 8, I, first branched ray 1 2/5 in head; adipose fin 3 7/8; D. III, 8, I, first branched ray 2 1/5; caudal 1 2/5, forked; least depth of caudal peduncle 2 7/8; pectoral 2 1/5; ventral 1 3/5.

Skin, where scales have fallen, brown. Scales silvery, also sides of head and iris, with iridescent reflections. Fins whitish.

Diagnosis. Greatly like Diaphus longleyi but with the suprapectoral photophore lower and small photophore at lower eye edge posterior or below hind edge of pupil, also only 3

precaudals present.

Type, No. U.S.N.M. D.5477.

Escarceo Light, S. 53° E., 5.80 miles (N. 13° 35' E. 120° 54' 36'), Manila Bay, Luzon. In 260 fathoms. March 24, 1908.

Length 23 mm.

Differs ~~slightly~~ from Diaphus richardsoni Tåning, ~~in the absence of the long~~ which has well developed anterbital luminous body on upper front eye edge, long one also whole extent of lower eye edge followed by small photophore, 5 anteroanals and no luminous body below suprapectoral photophore.

For Dr. Maria Harvey.

D.5454. Legaspi Light, S. 64° W., 5.7 miles (N. Lat. 13° 12' E. Long. 123° 30' 30"), east coast of Luzon. 153 fathoms. June 7, 1909. Length 40mm.

D. 5185. Lusaran Light, N. 23° E., 25.50 miles (N. Lat. 10° 05' 45" E. Long. 122° 18' 30"), between Panay and Negros. 638 fathoms. March 30, 1908. Length 10 to 14 mm. 4 examples.

D. 5422. Lusaran Point Light, S. 80° E., 9.7 miles (N. Lat. 10° 31' E. Long. 122° 18' 45"), between Panay and Guimaras. March 30, 1909. Length 31 mm.

4157

Diaphus microps Brauer

Myctophum (Myctophus) microps Brauer, Zool. Anzeiger, vol. 28, Nr. 10, Dec. 20, 1904, p. 400, (392) fig. 1.

S. Indian Ocean.

Myctophum (Diaphus) microps Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 216, text fig. 136 (west of Chagos Archipelago lat. 4°5' S" E. Long. 70°1'9").

Diaphus microps Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 116 (compiled).

Depth 3 5/6; head 3 1/10. Snout 6 4/5 in head; eye 4 1/2; greater than snout; maxillary extends 1 1/5 eye diameters behind eye, slender, length 1 3/5 in head; interorbital high.

Scales 37 in lateral line, cycloid.

Large superior antorbital luminous body, at upper front eye edge above nostrils; 2 opercular photophores, upper larger, in slightly inclined line with lower eye edge, upper subpectoral and fourth pectoral; 3 branchiostegals; 5 pectorals,

first interval much greatest,
fourth spot elevated level with
interval between subpectorals, over
and little posterior to third pectoral;
1 suprapectoral, slightly nearer
pectoral fin origin than lateral
line, close behind upper subpectoral
in vertical; 2 subpectorals, in
inclined line with first pectoral,
first median, upper close before
bases of lower pectoral rays; 4
ventrals, second nearly level with
median supraanal before and

slightly over third, which lower than
first; 1 supraventral, near upper
fourth between lateral line and ventral
base; anals 7+5, first anteroanal
little elevated, last less so and
posteroanals behind anal fin base;
3 supraanals in slightly inclined
row, passing to vent, first interval
half second or upper interval,
median spot little above first
anteroanal; 1 posterolateral, close
below lateral line over last
anteroanal; 4 precaudals, close,

arched progressively backward along lower caudal base with uppermost or fourth close below end of lateral line. Moderate luminous body below suprapectoral photophore.

D. III, 13, first branched ray 1 1/2 in head; adipose fin 3 1/8; A. III, 14, first branched ray 1 7/8; caudal 1 1/6, deeply emarginate; least depth of caudal peduncle 2 3/4; pectoral 2; ventral 1 1/2.

Length 16.5 mm. (Brauer.)

Indian Ocean.

~~[illegible]~~ ~~[illegible]~~ regani Jäning ~~dyeitibe~~

* Diaphus regani Jäning

× Vidensk. Medd. fra Dansk naturh. Foren. Bd-94, 1932 f-139, fig-12 (type locality = Lat-20°53.2' S., Long. 164°03-3' E., off New Caledonia).

† D. 5263. L. 58 mm, to end of damaged caudal.

4162

Diaphus garmani Gilbert

Diaphus garmani Gilbert, Bull. Mus. Comp. Zool., vol. 46, no. 14, April 1906, p. 258, pl. 2. Cuba. — Janing, Videnskb. Medd. Dansk naturh. Foren. Köbenhavn, vol. 86, 1928, p. 61 (north Atlantic; diagnosis in key). — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, dec. 1928, p. (123) 145, fig. 33 (off Green Cay, New Providence; N. 23°48' W. 76°35'; off Cat Island; off San Salvador; off Crooked Island). — Norman, Ann. Mag. Nat. Hist., ser. 10, vol. 4, Nov. 1929, p. 511 (Ceylon).

Diaphus malayanus Weber, Siboga Exped., vol. 57, Fische, 1913, p. 89, fig. 30. Halmaheira Sea, S. Lat. 0°17'.6 E. Long. 129° 14.5', in 1000 meters; Banda Sea, S. Lat. 3°58' E. Long. 128°20', in 2000 meters. — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 116 (compiled). Myctophum malayanum Weber and Beaufort, Fishes Indo Austral. Archipelago, vol. 2, 1913, p. 171, fig. 65 (Weber's materials). Myctophum (Diaphus) malayanum Ahl, Zool. Anzeiger, vol. 81, heft 7/10, 1929, p. 196 (Tabang).

Depth 5 to 5 1/5; head 3 2/3 to 3 4/5, width 2 2/5 to 2 1/2. Snout 6 1/3 to 7 1/8 in head; eye 4 2/3 to 5, greater than snout, 1 1/5 to 1 2/5 in interorbital; maxillary extends 1 1/2 to 1 2/3 eye diameters behind eye though not quite to well inclined hind preopercle edge, slender, length 1 1/3 to 1 2/5 in head; interorbital 4 to 4 2/5, nearly level. Gill rakers 5+12, lanceolate, slightly clavate, 1 1/2 in eye; gill filaments nearly equal gill rakers.

Scales 35 in lateral line to caudal base, not enlarged; 4 above, 5 below, 12 predorsal. Ventral with pointed axillary scale 2 2/3 in fin. Caudal base

scaly. Scales very caducous, most all fallen. Scales with 2 basal radiating striae; circuli fine, complete.

Antorbital luminous organ large, includes whole front eye edge, upper or supraorbital quite small, high, barely 1/3 diameter of pupil; 2 opercular photophores, upper larger and in line with lower eye edge and pectoral fin origin; 3 equidistant veiled branchiostegals, largely obscured by luminous masses; 5 pectorals, first interspace longest, fourth photophore over third and elevated level with pectoral fin origin; 1 suprapectoral, about lowest 2/7 in space between lateral line and

pectoral fin origin, over upper subpectoral;
2 subpectorals, in oblique line with
first pectoral, first or lower subpectoral
median and upper close before bases of
lowest pectoral fin rays; 5 ventrals,
second and third progressively higher
from first to third level with fourth
pectoral and over fourth ventral; 1
supraventral at lowest 2/5 between lateral
line and pectoral fin base though little
behind its origin; 6 or 7 + 5 or 6 anals,
first anteroanal elevated level with
third ventral, advanced little from
second anteroanal which only slightly
higher than third and fifth and sixth

, arch up continuously to posterolateral, first or first and second posteroanals above anal fin base; 3 supraanals, in line little inclined from vertical from first or lowest little behind fifth ventral, second or median slightly higher than first anteroanal and third close below lateral line opposite anal origin; 1 posterolateral, rather close below lateral line before adipose fin; 4 precaudals, arched along base of lower caudal lobe progressively so fourth falls little below end of lateral line. Luminous organ below suprapectoral.

D. $\frac{IV}{=}$, 10, $\frac{I}{=}$ to $\frac{IV}{=}$, 12, $\frac{I}{=}$, first branched

ray 1 1/5 to 1 1/4 in head; adipose fin 3 to 4 1/4; A. III, 12, I or III, 13, I, first branched ray 1 2/5 to 1 2/3; caudal 1 1/10 to 1 1/8, forked; least depth of caudal peduncle 3; pectoral 2 2/5 to 2 3/5; ventral 1 1/4 to 1 1/3.

Brown, scale pockets where scales fallen darker. Side of head and scales all silvery with iridescent tints. Iris gray, with whitish luminous areas. Fins whitish, bases dusky.

Atlantic, Indian and Pacific Oceans.

My materials all agree largely with Parr's figure except that the suprapectoral is lower and the ventral fins usually

inserted below the dorsal origin.
They all differ from both Parr's and
Weber's figures in that the posterolateral
photophore is well before the adipose
fin so that a line to it would be oblique.
The figures referred to both show it
below the adipose fin.

3708, 3709. D. 5387. Bagatao Island Light (outer), S. 80° E., 27 miles (N. 12° 54' 40" E. 123° 20' 30"), between Burias and Luzon. In 209 mm. March 11, 1909. Length 113 to 120 mm.

D. 5260. Balanja Point, N. 28° W., 7.20 miles (N. 12° 25' 35" E. 121° 31' 35"), off southeastern Mindoro. In 234 fathoms. June 3, 1908. Length 72 to 86 mm. 2 examples.

17818. D. 5565. Jammi Island (N.), S. 69° W., 6 miles (N. 5° 51' 42" E. 120° 30' 30"), between Jolo and Tawi Tawi. In 243 fathoms. September 21, 1908. Length 134 mm.

1769. D. 5325. Hermanos Island (N.), 86° E., 16.75 miles (N. 18° 34' 15" E. 121° 51' 15"),

4171

off northern Luzon. 3n 224 fathoms. November 12, 1908. Length 145 mm.

1492. D. 5326. Hermanos Island (N.), N. 69° E., 8 miles (N. 18° 32' 20" E. 122° 1"), off northern Luzon. 3n 230 fathoms. November 12, 1908. Length 144 mm.

1569, 1570. D. 5135. Jolo Light, S. 46° W., 11.90 miles (N. 6° 11' 50" E. 121° 8' 20"), vicinity of Jolo. 3n 161 fathoms. February 7, 1908. Length 143 to 164 mm.

3293. D. 5625. Kayoa Island (S.E.), S. 3° W., 6 miles (N. 0° 7' E. 127° 28'), between Gilolo and Kayoa Islands. 3n 230 fathoms. November 29, 1909. Length 148 mm.

2400 to 2406, 2408, 2409. D. 5589. Mabul Island (N.W.), N. 3° W. 2.8 miles (N. 4° 12' 10" E. 118° 38' 8"), Sibuko Bay, Borneo, and vicinity. In 260 fathoms. September 29, 1909. Length 117 to 146 mm.

1627. D. 5590. Mabul Island (N.W.), N. 22° W., 4.3 miles (N. 4° 10' 50" E. 118° 39' 35"), Sibuko Bay, Borneo, and vicinity. In 310 fathoms. September 29, 1909. Length 123 mm.

3160. D. 5503. Macabalan Light (Mindanao), S. 31° E., 6.6 miles (N. 8° 36' 26" E. 124° 36' 8"). In 226 fathoms. August 4, 1909. Length 167 mm.

4102. D. 5624. Makyan Island (S.), N. 67° W., 8.9 miles (N. 0° 12' 15" E. 127° 29' 30"), between Gilolo and Makyan islands. In 288 fathoms. November 29, 1909. Length 148 mm.

D. 5280. Malavatuan Island (N.), S. 60° W., 6.10 miles (N. 13° 55' 20" E. 120° 25' 55"), China Sea vicinity southern Luzon. In 193 fathoms. July 17, 1908. Length 59 to 167 mm. 18 examples.

D. 5281. Malavatuan Island (N.), S. 84° W., 4.30 miles (N. 13° 52' 45" E. 120° 25'), China Sea, vicinity southern Luzon. In 201 fathoms. July 18, 1908. Length 120 to 150 mm. 7 examples.

2755. D.5268. Matocot Point, S. 50° E., 5.80 miles (N. 13° 42' E. 120° 57' 15"), Verde Island Passage and Batangas Bay. In 170 fathoms. June 8, 1908. Length 180 mm.

D.5547. Noble Point, Tulayan Island (E.), S. 38° E., 9.5 miles (N. 6° 9' 20" E. 121° 13' 40"), Jolo Island and vicinity. In 155 fathoms. September 15, 1909. Length 56 to 130 mm. 34 examples.

1307. Pollock. May 23, 1909. Length 129 mm.

1509, 1510, 1511. D.5592. Silungan Island (N.), N. 1° W., 6.4 miles (N. 4° 12' 44" E. 118° 27' 44"), Sibuko Bay, Borneo, and vicinity. September 29, 1909. Length 110 to 132? mm. 3 examples.

3741. D.5371. Tayabas Light (outer), N. 43° W., 6 miles (N. 13° 49' 40" E. 121° 40' 15"), Marinduque Island, and vicinity. In 83 fathoms. February 24, 1909. Length 163 mm.

2181. D.5374. Tayabas Light (outer), N. 9° E., 7.4 miles (N. 13° 46' 45" E. 121° 35' 8"), Marinduque Island, and vicinity. In 190 fathoms. March 2, 1909. Length 105 mm.

4176

Diaphus glandulifer Gilbert

Diaphus glandulifer Gilbert, Mem. Carnegie Mus., vol. 6, no. 2, Aug. 1913, p. 90, pl. 11, fig. 2. Suruga Gulf, in 300 fathoms; Sagami Bay, Colnett Strait and Suruga Bay, in 300 fathoms. — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 117 (compiled); Proc. U.S. Nat. Mus., vol. 76, 1929, p. 32 (type).

Panthophox glandulifer Jordan and Hubbs, Mem. Carnegie Mus., vol. 10, no. 2, June 27, 1925, p. 157 (Misaki).

4177

Depth 4 to 4 3/5; head 3 to 3 2/5, width 2 1/4 to 2 1/2. Snout 6 to 7 in head; eye 3 3/4 to 4 1/5, greater than snout, subequal with interorbital; maxillary reaches well behind eye or not quite to inclined hind preopercle edge, slender, slight expansion 3 3/4 to 4 1/4 in eye, length 1 1/4 to 1 1/2 in head; interorbital 3 1/8 to 3 1/3, broadly convex. Gill rakers 11 to 12 + 17 or 18, lanceolate, length 1 1/4 in eye, twice gill filaments.

Scales 36 in lateral line to caudal base, enlarged, 3 above, 3 below. Caudal base well scaled. Ventral with pointed axial scale.

small lower antorbital photophore, larger luminous organ along middle of lower eye edge; 1 opercular photophore, little above hind maxillary end; branchiostegals ?; 5 pectorals, first interspace longest, fourth photophore above and little posterior to third and level with second ventral; 1 suprapectoral about lower 2/5 of space between lateral line and pectoral fin, origin behind upper subpectoral; 2 subpectorals, front or lower little nearer first pectoral than upper subpectoral, which close before bases of lower pectoral rays; 4 ventrals, second over and little before

third at same level as fourth pectoral;
1 supraventral at upper 2/5 in space
between lateral line and ventral origin;
5+6 anals, first anteroanal elevated
high as median supraanal close
before second anteroanal, posteroanals
all behind anal fin base; 3 supraanals,
in slightly inclined line from first
or lowest close before anal fin origin,
second below middle in space to upper
which close below lateral line; 2
posterolaterals, first or lower close
behind and above last anteroanal,
second close below lateral line; 4
precaudals, arched on caudal base

with uppermost close below and behind end of lateral line. Large luminous organ below suprapectoral.

D. III, 12, I, first branched ray 1 1/5 to 1 2/5 in head; adipose fin 3 1/4 to 3 1/2; A. II, 13, I, first branched ray 1 2/3 to 2; caudal 1 1/8 to 1 1/4, well emarginate; least depth of caudal peduncle 2 3/4 to 3 1/8; pectoral 1 1/5 to 2 2/5; ventral 1 1/10 to 1 1/4.

Pale brown generally; all scale pockets darker or dusky, all more or less sprinkled with dark or dusky dots. Investing membranes black around large conspicuous infraorbital luminous organ, also less conspicuous to 2 close

antorbitals. Iris silvery white, likewise side of head and sheen of remaining scales. Fins all pale to whitish.

Pacific Ocean. The Philippine specimens, possibly due to preservation, do not show the luminous whitish bodies, one below most of photophores. The type is well illustrated by Gilbert.

D. 5260. Balanja Point, N. 28° W., 7.20 miles (N. 12° 25' 35" E. 121° 31' 35"), off southeastern Mindoro. In 234 fathoms. June 3, 1908. Length 84 mm.

D. 5365. Cape Santiago Light, N. 73° W., 6.7 miles (N. 13° 44' 24" E. 120° 45' 30"), Balayan Bay, Luzon. In 240 fathoms. February 22, 1909. Length 77 to 88 mm. 3 examples.

D. 5280. Malavatuan Island (N.), S. 60° W., 6.10 miles (N. 13° 55' 20" E. 120° 25' 55"), China Sea, vicinity southern Luzon. In 193 fathoms. July 17, 1908. Length 85 to 88 mm. 3 examples.

4183

D. 5268. Matocot Point, S., 50° E., 5.80 miles (N. 13° 42' E. 120° 57' 15"), Verde Island Passage and Batangas Bay. In 170 fathoms. June 8, 1908. Length 65 to 78 mm. 3 examples.

D. 5227. Point Arigon, S. 44° E., 18.30 miles (N. 12° 53' 45" E. 121° 52' 30"), east of Mindoro. In 322 fathoms. May 5, 1908. Length 16 to 22 mm. 4 examples.

↑ D. 5111. Sombrero Island, S. 41° E., 4.50 miles (N. 13° 45' 15" E. 120° 46' 30"), China Sea off southern Luzon. In 236 fathoms. January 16, 1908. Length 76 to 88 mm. 7 examples. One with third and fourth pectoral photophores abnormally close,

74501 U. S. N. M.

Albatross Collection (5058). Length 60 to 67 mm. 6 examples. Paratypes. These still show a number of the photophores each

D. 5268. Matocot Point, S. 50° E., 5.80 miles (N. 13° 42' E. 120° 57' 15"), Verde Island Passage and Batangas Bay. In 170 fathoms. June 8, 1908. Length 65 to 78 mm. 3 examples.

D. 5227. Point Arigon, S. 44° E., 18.30 miles (N. 12° 53' 45" E. 121° 52' 30"), east of Mindoro. In 322 fathoms. May 5, 1908. Length 16 to 22 mm. 4 examples.

74472 U. S. N. M.

Albatross Collection (5058). Length 69 mm. Type of Diaphus glandulifer.

74501 U. S. N. M.

Albatross Collection (5058). Length 60 to 67 mm. 6 examples. Paratypes. These still show a number of the photophores each

with a pale or diffuse whitish glandular spot below, though their general coloration quite dark.

74653 U.S.N.M.

Albatross Collection (4926). Length 13 mm.

74654 U.S.N.M.

Albatross Collection (5064). Length 12 to 21 mm. 7 examples.

74655 U.S.N.M.

Albatross Collection (5063). Length 16 to 18 mm. 2 examples.

74656 U.S.N.M.

Albatross Collection (5084). Length 16 mm.

4185

Diaphus fulgens (Brauer)

Myctophum (Myctophus) fulgens Brauer, Zool. Anzeiger, vol. 28, nr. 10, dec. 20, 1904, p. 402, fig. 4.

Indian Ocean.

Myctophum (Diaphus) fulgens Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 224, text fig. 146 (S. 4°5'8" E. 70°1'9", between Chagos and Seychelles; S. 2°38'7" E. 65°59'2"; N. 0°25'7" E. 43°37'6", off north east Africa; N. 9°6'1" E. 53°41'2"). — Pappenheim, Deutsch. Südpolar Exped., vol. 15; Zool. 7, 1914, p. 195 (S. 32°8' W. 8°28', 1000 meters; N. 17°28' W. 29°42', 3000 meters).

Diaphus fulgens Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, dec. 1928, p. 117 (compiled).

Depth 4 1/8; head 3 1/3. Snout 9 1/2 in head; eye 2 9/10, greatly exceeds snout; maxillary extends 1/2 eye diameter behind eye, slender, length 1 1/2 in head; interorbital very low.

Scales 35 in lateral line, enlarged, cycloid.

Large antorbital luminous body, upper larger section over nostrils to eye, lower narrow along lower front eye edge; 2 opercular photophores, upper larger, in line with lower eye edge and fourth pectoral; 3 branchiostegals; 5 pectorals, first interval greatly longest, fourth

spot elevated level with pectoral fin origin over and little posterior from third pectoral spot; 1 suprapectoral, little in advance of upper subpectoral, nearly midway between lateral line and pectoral fin origin; 2 subpectorals, in inclined line with first pectoral, about equidistant; 5 ventrals, first to third in well inclined series with first interval shorter, third spot little above level of fourth pectoral, fourth and fifth side by side before vent; 1 supraventral, midway between

lateral line and ventral fin base,
also little lower than suprapectoral;
anals 5 + 4 or 5, first and fifth anteroanals
higher than others in series, posteroanals
well behind anal fin base; 3
supraanals, in inclined line with
last ventral, first and second equidistant
from last ventral, upper interval
between second and third supraanals
equals space between fifth ventral and
second supraanal which at same level
as first anteroanal; 1 posterolateral,
above and behind last anteroanal at

same level below lateral line as uppermost supraanal; 4 preandals, equidistant, arched posteriorly at caudal base to fourth rather close below end of lateral line. Luminous body below suprapectoral.

D. III, 11, first branched ray 1 7/8 in head; adipose fin 2 9/10; caudal 1 2/5, emarginate; least depth of caudal peduncle 2 3/5; pectoral 3; ventral 1 1/5.

Length 39 mm. (Brauer.)

Indian Ocean.

4190

Diaphus vanhoeffeni (Brauer)

Myctophum (Diaphus) vanhoeffeni Brauer,

Deutsch. Tiefsee Exped. Valdivia, vol. 5,

Tiefsee-Fische, 1906, p. 222, text fig.

143. German South Pole Expedition.

Diaphus vanhoeffeni Parr, Bull. Bingham

Oceanogr. Collection, vol. 3, art. 3, dec.

1928, p. 117 (compiled).

Myctophum (Diaphus) vanhöffeni

Pappenheim, Deutsch. Südpolar Exped.,

vol. 15, Zool. 7, 1914, p. 195 (N. 0°46'

W. 18°59'; 3000 meters).

depth 4 3/4; head 3 1/6. Snout 5/5 in head; eye 4, greater than snout; maxillary extends eye diameter behind eye, slender, length 1 2/5 in head; interorbital rather low.

Scales 38 to 40 in lateral line, cycloid.

2165

Antorbital luminous body along front eye edge, larger above and narrowing below, also small photophore at middle of lower eye edge; 2 opercular, upper larger, and in line with lower orbital and second ventral spots; 3 branchiostegals; 5 pectorals,

first interval longest, fourth spot elevated till level with third ventrals, and little nearer third pectoral in interval from same to fifth pectoral; 1 suprapectoral, near upper third in space between lateral line and pectoral fin origin; 2 subpectorals, in inclined line with first pectoral, first median and second or upper close before lower pectoral ray bases, which also little behind suprapectoral; 5 ventrals, first to third in inclined line with

third highest; 1 supraventral, about upper 2/5 in space between lateral line and ventral base; anals 8+5, level, posteroanals behind anal fin base; 3 supraanals, in broadly angular row, first and second in inclined line with last ventral, equidistant, upper or third close below lateral line and little advanced from median; 1 posterolateral; close below lateral line over last anteroanal; 4 precaudals, first 3 close, in inclined row and fourth above and slightly posterior

to third rather close below end of lateral line. Luminous scale below suprapectoral photophore.

D. IV, 10, first branched ray 2 in head; adipose fin 3 1/3; A. III, 13, first branched ray 2 1/8; caudal 1/10, forked; pectoral 2 1/3; ventral 1 2/3.

Length 20 mm. (Brauer.)

Tropical Atlantic.

4195

Diaphus dumerilii (Bleeker)

Scopelus dumerilii Bleeker, Act. Soc. Sci. Ind. Néerland., no. 3, vol. 1, 1856, p. (6) 66. Manado, Celebes; no. 4, vol. 3, 1857-58, p. 8 (Manado). — Günther, Cat. Fishes Brit. Mus., vol. 5, 1864, p. 410 (compiled);

Myctophum (Scopelus) dumerili Bleeker, Atlas Ichth. Ind. Néerland., vol. 6, 1866-77, p. 158, pl. (1) 277, fig. 2 (Manado).

Myctophum dumerili Weber and Beaufort, Fishes Indo Austral. Archipelago, vol. 2, 1913, p. 166 (types; Ménado, Celebes).

Diaphus dumerili Parr, Bull. Bingham

4196

Oceanogr. Collection, vol. 3, art. 3, dec. 1928, p. (115) 126, text fig. 23 (off Green Cay, New Providence, Cat Island, San Salvador, Acklin Island, N. 23° to 32° W. 64° to 77°, 5000 to 8000 feet).

— Fowler, Mem. Bishop Mus., vol. 10, 1928, p. 68 (part; not Hawaiian materials).

— Parr, Proc. U. S. Nat. Mus., vol. 76, art. , 1929, p. 31 (type of Lampanyctus lacerta).

— Norman, Ann. Mag. Nat. Hist., ser. 10, vol. 4, Nov. 1929, p. 511 (off south west Ireland N. 52° W. 12°).

— Borodin, Bull. Mus. Comp. Zool., vol. 72, no. 3, Aug. 1931, p. 76 (N. 33° 58' W. 63° 55'; 1500 meters).

4197

Myctophum nocturnum Poey, Mem. Hist. Nat. Cuba, vol. 2, 1860, p. 426. Havana.

Collettia nocturna Goode and Bean, Oceanic Ichth., 1895, p. 512 (reference). — Jordan and Evermann, Bull. U. S. Nat. Mus., No. 47, pt. 1, 1896, p. 567 (compiled).

Diaphus nocturnus Gilbert, Bull. Mus. Comp. Zool., vol. 46, 1906, No. 14, p. 255, pl. 1 (type; type of Lampanyctus lacerta).

Diaphus dumerili nocturnus Taaning, Videnska. Medd. Dansk Naturh. Foren. Köbenhavn, vol. 86, 1928, p. 58 (diagnosis in key).

Lampanyctus lacerta Goode and Bean, Oceanic Ichth., 1895, p. 81, pl. 24, fig. 89. N. 28°38'30" W. 85°52'30", 142 fathoms; N. 39°56' W. 70°14'30", 200 fathoms; N. 35°41' 30" W. 74°48'30", 671 fathoms; N. 39°50'45" W. 71°43', 131 fathoms; N. 36°1'30" W. 74°47' 30"; N. 39°55' W. 70°47', 224 fathoms; N. 39°50'30" W. 71°23', 182 fathoms. — Jordan and

4197

Myctophum nocturnum Poey, Mem. Hist. Nat. Cuba, vol. 2, 1860, p. 426. Havana.

Collettia nocturna Goode and Bean, Oceanic Ichth., 1895, p. 512 (reference). — Jordan and Evermann, Bull. U. S. Nat. Mus., No. 47, pt. 1, 1896, p. 567 (compiled).

Diaphus nocturnus Gilbert, Bull. Mus. Comp. Zool., vol. 46, 1906, No. 14, p. 255, pl. 1 (type; type of Lampanyctus lacerta).

1930, p. Scopelus schmitzi Johnson, Proc. Zool. Soc. London, 1890, p. 456. East end of Madeira.

Lampanyctus lacerta Goode and Bean, Oceanic Ichth., 1895, p. 81, pl. 24, fig. 89. N. 28°38'30" W. 85°52'30", 142 fathoms; N. 39°56' W. 70°14'30", 200 fathoms; N. 35°41' 30" W. 74°48'30", 671 fathoms; N. 39°50'45" W. 71°43', 131 fathoms; N. 36°1'30" W. 74°47' 30"; N. 39°55' W. 70°47', 224 fathoms; N. 39°50'30" W. 71°23', 182 fathoms. — Jordan and

— Norman, Discovery Rep., vol. 2, 1930, p. Scopelus sc
Soc. London

(S. 2° 49' 30" W. 9° 25' 30", 124 meters).

4198

Evermann, Bull. U. S. Nat. Mus., No. 47, pt. 1, 1896, p. 560 (compiled).

4199

Myctophum (Myctophus) lacerta Brauer, Zool. Anzeiger, vol. 28, Nr. 10, Dec. 20, 1904, p. 392 (diagnosis in key).

Myctophum (Diaphus) lacerta ~~Goode and Bean~~ Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 214, figs. 132–135 (N. 5°5'5" W. 13°27'5", Gulf of Guinea; N. 1°27'8" W. 10°16'5"; N. 0°20'2" W. 6°45'; N. 0°26'3" W. 6°32'; N. 1°51' E. 0°31'2"; N. 2°36'5" E. 3°27'5"; N. 0°25'8" E. 7°0'3"; S. 1°56'7" E. 7°40'6"; S. 3°55' E. 7°48'3"; S. 5°6'2" E. 9°58'6"; S. 9°31' E. 9°46'; N. 7°57'9" E. 91°47'2", Bay of Bengal; N. 7°43'2" E. 88°44'9"; N. 4°56' E. 78°13'8", south of Ceylon; S. 4°5'8" E. 73°24'8", north of Chagos; S. 3°24'6" E. 58°38'1", off Seychelles; S. 4°38'6" E. 51°16'6") — Zugmayer, Res. Camp. Sci. Monaco, vol. 35, 1911, p. 31 (N. 36°5'30" W. 9°00'30", 3660 meters)—

Diaphus agassizii Gilbert

Diaphus agassizi Gilbert, Mem. Mus. Comp. Zool., vol. 26, no. 6, 1908, p. 226, pl. 2. Nukuhiva, Marquesas Islands, to 300 fathoms; Mem. Carnegie Mus., vol. 6, no. 2, 1913, p. 85 (Suruga Bay, Japan, in 300 fathoms). — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 115 (note). — Fowler, Mem. Bishop Mus., vol. 10, 1928, p. 68 (compiled). — Parr, Proc. U. S. Nat. Mus., vol. 76, 1929, p. 30 (type).

? Nyctophum (Diaphus) lucerta (not Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 5, 1906, Tiefsee-Fische, pl.

4200

depth 4 3/4 to 5; head 3 1/4 to 3 2/5, width 2 1/3 to 2 2/5. Snout 6 to 6 1/4 in head; eye 3 2/3 to 3 3/4, greater than snout, 1 to 1 1/5 in interorbital; maxillary reaches well beyond eye though not to hind oblique. preopercle edge, slender, length

Myctophum (Lampanyctus) oculeum (not Garman) Brauer, Zool. Anzeiger, vol. 28, 1904, p. 396 (Valdivia collection). —

Pappenheim, Deutsche Südpolar Exped., vol. 15, pt. 2, 1914, p. 196 (south of Ascension Island, 1900 meters; south east of St. Helena, 1500 meters; south east of Ascension Island, 1200 meters; Cape Verde, 1500 meters).

1 1/3 to 1 3/5 in head, interorbital 3 to 3 1/5, broad, little convex. Gill rakers 8 + 17, lanceolate, 1 1/3 in eye, gill filaments 1/2 gill rakers.

Scales 35 to 36 in lateral line to caudal base and 2 more on latter, 3? above, 4? below, not enlarged in lateral line, tubes large and prominent. Scales very caducous, most all fallen. Caudal base scaly.

Small antorbital luminous body somewhat above upper half of front eye edge and another below, 2 opercular photophores, upper larger on line with lower eye edge and upper

subpectoral; 3 equidistant branchiostegals; 5 pectorals, with fourth elevated and above third, interspace between first and second longest; 1 suprapectoral, little nearer lateral line than pectoral fin origin and little behind lower subpectoral; 2 subpectorals, ~~upper close below base of~~ first or lower before suprapectoral and midway between first pectoral and upper subpectoral or little closer to upper subpectoral, which close below bases of lowest pectoral rays; 5 ventrals, second little elevated and posterior to first, third still higher and posterior; 1

supraventral midway or little nearer lateral line than ventral fin base; 5 or 6 + 4 to 6 anals, posteroanals all behind anal fin base; 3 supraanals nearly in vertical row or slightly inclined up from last ventral and uppermost opposite anal fin origin; 2 posteriolaterals, lower close above and behind last anterolateral and upper close below lateral line, still posterior; 4 precaudals arched on lower caudal base with uppermost close below end of lateral line.

D. III, 10, I or III, 11; I, first branched ray 1 1/3 to 1 2/3 in

head; adipose fin 2 2/3 to 3 1/4;
A. III, 11, I, first branched ray
1 3/4 to 2 1/5; caudal 1 1/8 to
subequal with head, well
forked; least depth of caudal
peduncle 3 to 4 2/5; pectoral
2 1/4 to 2 2/5; ventral 1 4/5 to 1 7/8.

Brown, skin and scale pockets dusky. Fin bases more or less dark. Fins whitish. Sides of head and few remaining scales with silvery luster.

Indian, Atlantic and Pacific Oceans.

4205

28733 U. S. N. M. N. Lat. 39° W. Long. 70°. U. S. F. C. Length 60 mm., caudal tips damaged. As Myctophum lacerta, also the following.

28843 U. S. N. M. N. Lat. 39° W. Long. 71°. U. S. F. C. Steamer Fish Hawk. Length 53 to 58 mm., caudal tips damaged. 3 examples.

43778 U. S. N. M. N. Lat. 28° W. Long. 85°. Albatross Collection (2401). Length 64 to 67 mm., caudal tips damaged. Type (largest) and 2 paratypes of Myctophum lacerta.

43779 U. S. N. M. N. Lat. 39° W. Long. 74° Albatross Collection (2548). Length 44 mm., caudal tips damaged.

43771 U. S. N. M. N. 36° W. 74° Albatross Collection (2426). Length 46 to 61 mm. 12 examples. Paratypes of Lampanyctus lacerta.

4206

43780 U.S.N.M. N.Lat. 35° W. Long. 74° , Albatross Collection ( ). Surface. Length 56 mm., caudal tips damaged.

43801 U.S.N.M. N.Lat. 39° W. Long. 71°. Albatross Collection (2583). Surface. Length 47 mm., caudal tips damaged.

Diaphus hypoleucens Parr

Diaphus hypoleucens Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 130, fig. 24. N. 23°58' W. 77°26'; 7000 feet, Bahamas.

Depth 4; head 3. Snout 6 7/8 in head from snout tip; eye 4; maxillary extends 1 1/2 eye diameters behind eye; length 1 1/4 in head from snout tip.

Scales 36 in lateral line.

Small, rounded, upper antorbital luminous body above each nostril close to margin of eye; no lower antorbital; oval suborbital organ little less than pupil diameter, at center of lower eye edge; 2 opercular photophores, upper in line with lower eye edge and pectoral origin; 5 pectorals, first interval longest, fourth elevated over interval between third and fifth, nearly

level with upper subpectoral; 1 suprapectoral, over upper subpectoral near last third between lateral line and pectoral fin origin; 2 subpectorals, in line with first pectoral, first subpectoral little nearer first pectoral than upper which close before lowest pectoral ray bases; 5 ventrals, second and third in well inclined line from first; 1 supraventral nearly midway between lateral line and ventral base; anals 6 + 5, first and last anteroanal elevated, posteroanals all behind anal fin base; 3 supraanals in slightly inclined line, equidistant, second little above first anteroanal and third well below lateral line; 1 posterolateral 1 diameter below lateral line; 4 precaudals, equidistant in crescent, last scarcely above middle to lateral line. Suprapectoral with small luminous scale.

D. 13; A. 15. Brownish black, cheek snout and mandible colorless. Length 37 mm., without caudal. (Parr.)

Diaphus boringi new species

Depth 3 2/3 to 4; head 3 to 3 1/3, width 2 to 2 2/5. Snout 7 to 7 1/3 in head; eye 3 1/10 to 3 1/5, greater than snout or interorbital; maxillary reaches well behind eye or nearly opposite slightly inclined hind preopercle edge, slender, length 1 3/5 to 1 2/3 in head; interorbital 3 1/5 to 4, very slightly convex. Gill rakers 7+17, lanceolate, little greater than gill filaments or 1/2 in eye.

Scales 34 or 35 in lateral line to caudal base and 1 or 2 more on latter, little enlarged, tubes simple, prominent; 3 above,

3 below, 15 or 16 predorsal to occiput. Ventral axillary scale large, 2 1/5 in fin. Caudal base scaly. Scales with 3 basal radiating striae; 3 or 4 feeble or imperfect radiating apical striae; circuli fine.

Anteorbital luminous organ with rather large upper section, lower section below lower front eye edge; photophore little behind middle along lower eye edge; 1 opercular, little above hind maxillary end; 3 equidistant veiled branchiostegals; 5 pectorals, first interspace equals space between second and fifth, fourth photophore above and little posterior to third at same level with upper subpectoral;

1 supraventral, little below lower third between lateral line and pectoral fin origin; 2 subpectorals, first slightly nearer upper than first pectoral; 5 ventrals, second but slightly higher, fifth similar, third before fourth and at same horizontal level as fourth pectoral; 4+4 anals, first anteroanal higher than second or little below level of middle or second supraanal, posteroanals behind anal base; 3 supraanals in inclined row from little behind last ventral, first little nearer last ventral than second supraanal and third rather close behind lateral line over anal origin; 2 posteriolaterals, first or lower

close behind last anteroanals, upper rather close below lateral line opposite base of last anal ray; 4 precaudals forming arc progressively to uppermost which rather close below end of lateral line. Large luminous organ below and behind suprapectoral photophore.

D. III, 9, I, first branched ray 1 1/2 to 2 in head; adipose fin 3 1/4; A. III, 10, I, first branched ray 2 4/5 to 3; caudal 1 1/3 to subequal with head, well emarginate; least depth of caudal peduncle 2 1/2 to 2 4/5; pectoral 1 3/4 to 2 3/4; ventral 1 1/5 to 1 4/5.

Brown, pockets all dusky where scales have fallen. Scales, sides of head and iris silvery,

with iridescent reflections. Fins whitish.

Diagnosis. In this species the photophores are arranged as in Diaphus hypolucens Parr. The upper antorbital is similar and the lower very different or on the lower front edge of the eye, also always a marginal lower or infraocular photophore midway on lower eye edge. The latter is apparently a character shared with Diaphus metopoclampus (Cocco).

For Dr. Alice Boring of Yenching University, Peiping, China.

D. 5270. Escarceo Light, S. 9° E., 4.25 miles (N. Lat. 13° 35' 45" E. Long. 58° 30"), Verde Island Passage and Batangas Bay. 235 fathoms. June 8, 1908. Length 26 mm.

D. 5497. Bantigui Island, N. 64° W., 10 miles (N. Lat. 9° 07' 15", E. Long. 124° 59' 30"), between Leyte and Mindanao. 960 fathoms. August 3, 1909. Length 30 mm.

D. 5233. Limasawa Island (S.), S. 70° E., 19.50 miles (N. Lat. 10° 00' 22" E. Long. 124° 45' 06"), between Bohol and Leyte. May 7, 1908. Length 50 to 53 mm. 3 examples. Type, largest.

75765 U.S.N.M. Marquesas Islands.

Albatross Collection. Length 15 mm.

Type of Diaphus nanus.

D. 5246. Luban Island (N.), S. 58° W., 4.6 miles (N. Lat. 6° 29' 15", E. Long. 126° 18' 45"), Pacific Ocean east of Mindanao. May 15, 1908. Length 43 to 45 mm. 3 examples.

D. 5422. Lusaran Point Light, S. 80° E., 9.7 miles (N. Lat. 10° 31', E. Long. 122° 18' 45"), between Panay and Guimaras. March 30, 1909. Length 29 mm.

D. 5500. Macabalan Point Light, (Mindanao), S. 20° E., 7.9 miles (N. Lat. 8° 37' 45", E. Long. 124° 36' 45"). 267 fathoms. August 4, 1909. Length 38 mm.

D. 5287. Sombrero Island, N. 68° E., 11.25 miles (N. Lat. 13° 37' 40", E. Long. 120° 39'), China Sea, vicinity southern Luzon. 379 fathoms. July 20, 1908. Length 49 mm., snout damaged.

D. 5227. Point Origan, S. 44° E., 18.30 miles (N. Lat. 12° 53' 45", E. Long. 121° 52' 30"), east of Mindoro. 322 fathoms. May 5, 1908. Length 19 or 20 mm.

2 examples.

Diaphus lütkeni (Brauer)

Myctophum (Nyctophus) lütkeni Brauer, Zool. Anzeiger, vol. 28, nr. 10, dec. 20, 1904, p. (393) 400.

Indian Ocean.

Myctophum (Diaphus) lütkeni Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 221, text figs. 141-142 (west of Chagos Archipelago; S. 4°5'8" E. 70°1'9"; off Zanzibar; north east coast of Africa; S. 5°12'5" E. 46°32'3"; N. 0°25'7" E. 43°37'8"; N. 9°6'1" E. 53°41'2").

Diaphus luetkeni Taaning, Vidensk. Medd. Dansk. Naturh. Foren. Kjöbenhavn, vol. 86, 1928, p. 59 (diagnosis in key).

Pappenheim, Deutsch. Südpolar Exped., vol. 15, Zool. 7, 1914, p. 195 (N. 0°46' W. 18°59'; 3000 meters).

Diaphus lütkeni (Brauer)

Nyctophum (Nyctophus) lütkeni Brauer, Zool. Anzeiger, vol. 28, pt. 1, pp. 10, dec. 20, 1904, p. 400. (393)

Indian Ocean.

Nyctophum (Diaphus) lütkeni Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 221, text figs. 141-142 (west of Chagos Archipelago; S. 4°5'8" E. 70°1'9"; S. 5°12'5" E. 46°32'3"; off Zanzibar; N. 0°25'7" E. 43°27'8"; N. 9°6'1" E. 53°41'2"; north east coast of Africa).

Diaphus lutkeni Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 118 (compiled).

Pappenheim, Deutsch. Südpolar Exped., vol. 15, Zool. 7, 1914, p. 195 (N. 0°46' W. 18°59'; 3000 meters).

Depth 4 1/8; head 3 1/4. Snout 6 1/3 in head from snout tip; eye 3 1/4, greater than snout; maxillary extends 1 7/8 eye diameters behind eye, slender, length 1 1/3 in head from snout tip; interorbital rather low.

Scales 36 in lateral line, cycloid. luminous body,
Moderately large antorbital flash formed at upper front eye edge above nostrils, larger lower all along lower front eye edge; 2 opercular photophores, upper larger and in inclined line from lower eye edge to pectoral fin

origin; 3 branchiostegals; 5 pectorals, first interval much longest, fourth spot level with upper subpectoral close behind in vertical from fourth pectoral; 1 suprapectoral, about lower third between lateral line and pectoral fin origin, little behind upper subpectoral; 2 subpectorals, in inclined line with first pectoral, first spot midway and upper close before bases of lowest pectoral rays; 4 ventrals, second elevated level with median supraanal, rather close

before third ventral; 1 supraventral, near upper 2/5 between lateral line and ventral fin base; anals 6 or 7+ 5, first and last anteroanals elevated to slightly inclined line with second ventral, posteroanals behind anal fin base; 3 supraanals, in inclined line passing behind last ventral, first and second much closer than latter and third which little below lateral line; 1 posterolateral, above and little posterior to last anteroanal, little closer to

lateral line than interval above
uppermost supra anal to lateral line;
precaudals 1/7; first 3 close with third little
higher and fourth still posterior
close below end of lateral line.
Rather large luminous organ below
suprapectoral photophore.

D. III, 13, first branched ray 1 3/4
in total head length; adipose fin 3;
A. III, 13, I, first branched ray ½;
caudal 1 9/10, emarginate; least depth
of caudal peduncle 2 3/4; pectoral
3 1/4; ventral 1 3/4.

Length 53 mm. (Brauer.)

Indian Ocean. Braur figures a variation in which the median supraanal photophore is slightly posterior in its inclination with the other 2 spots. He also shows 7 anteroanals with the first 3 forming an inclined line to the uppermost supraanal, thus the first anteroanal is above the level of the median supraanal which is thus more nearly level with the second anteroanal.

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Diaphus suborbitalis Weber

Diaphus suborbitalis Weber, Siboga Exped., vol. 57, Fische, 1913, p. 90. S. 7°35'.4 E. 117°28'.6, 521 meters, Bali Sea;

S. 3°32'.5 E. 124°15'.5, 1500 meters, Banda Sea;

S. 5°53'.8 E. 132°48'.8, 560 meters, Arafura Sea.

— Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 118 (compiled).

Myctophum suborbitale Weber and Beaufort, Fishes Indo Austral. Archipelago, vol. 2, 1913, p. 167 (Weber's material).

? Diaphus termophilus Taaning, Vidensk. Medd. Dansk Naturh. Foren. Kjöbenhavn, vol. 86, 1928, p. 59. North Atlantic (diagnosis in key)

4224

Depth 4 1/2 to 5; head 3 1/2. Snout 2 1/2 in eye; eye 3 1/3 to 5 3/5 in head; greater than snout, 1 1/6 in interorbital; maxillary extends 2 eye diameter behind eye, slender, length 1 1/4 in head; interorbital moderately high.

Scales 38 in lateral line, cycloid.

Somewhat pear shaped antorbital luminous body above nostril with long axis horizontal and its point extending forward to median crest of snout; large rounded suborbital luminous body little behind middle of pupil ow lower border of orbit, dorsal border extends to level with iris and bordered black, lower

Diaphus suborbitalis Weber

Diaphus suborbitalis Weber, Siboga Exped., vol. 57, Fische, 1913, p. 90. Bali Sea in V. Lat. 7°35'.4 E. Long. 117°28'.6, in 521 meters; Banda Sea in V. Lat. 3°32'.5 E. Long. 124° 15'.5, in 1500 meters; Arafura Sea in V. Lat. 5°53'.8 E. Long. 134°48'.8, in 560 meters.—

Myctophum suborbitale Weber and Beaufort, Fishes Indo Austral. Archipelago, vol. 2, 1913, p. 167 (Weber's materials).

(~~Diaphus suborbitalis~~ Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 118 (compiled).

silvery half reaches maxillary; 2 opercular photophores - above each other, smaller lower one behind upper jaw; 3 branchiostegals; 5 pectorals, fourth above and somewhat behind third, first interval largest; 1 suprapectoral nearly midway between pectoral origin and lateral line; 2 subpectorals, in oblique line, first anterior below, second near or close before pectoral base or in vertical with suprapectoral; 5 ventrals, second and third outside series, third higher than second which

close before fourth in vertical; 1
supraventral, near upper third
in space between lateral line and
ventral fin base; anals 6 + 5 or 6,
first and last anteroanals elevated,
first level with median supraanal,
posteroanals behind ventral fin base;
3 supraanals, in slightly inclined
line from vent, median little nearer
lower than upper, which close below
lateral line; 1 posterolateral close
below lateral line slightly behind
last anteroanal; 4 precaudals, 3

anterior low and close, fourth posterior and close below end of lateral line. Suprapectoral with large luminous scale.

D. 15, origin close behind ventral origin; A. 14, below last third of dorsal base; least depth of caudal peduncle 2 3/4 in head; pectoral 1 7/8; ventral 1.

Length 95 mm. (Weber and Beaufort.)

East Indies.